

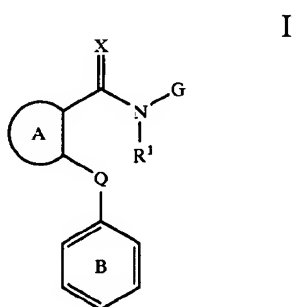
AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listing, of claims in the application:

Listing of Claims:

Please amend the claims as follows:

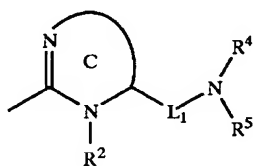
1. (Original) A compound of formula I:



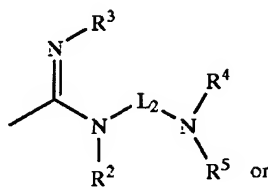
or a pharmaceutically acceptable salt thereof, wherein:

X is oxygen or sulfur;

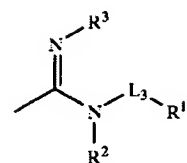
G is G1, G2 or G3:



G1



G2



G3

Ring C of G1 is an optionally substituted 5-6 membered aromatic or non-aromatic ring having two or three ring nitrogens;

L₁ is a C₁₋₆ alkylidene chain optionally substituted by 1-3 R⁶, wherein the alkylidene chain is optionally interrupted by -C(R¹¹)₂-, -C(R¹¹)₂C(R¹¹)₂-, -C(R¹¹)=C(R¹¹)-, -C≡C-, -O-, -S-, -N(R¹), -N(R¹⁰)CO-, -N(R¹¹)CO₂-, -CON(R¹⁰)-, -C(R¹¹)(OR¹)-, -CO-, -CO₂-, -OC(=O), -OC(=O)N(R¹⁰)-, -SO-, -SO₂-, -N(R¹⁰)SO₂-, or -SO₂N(R¹⁰)-, and wherein L₁ or a portion thereof optionally forms part of a 3-7 membered ring;

L₂ is a C₂₋₆ alkylidene chain optionally substituted by 1-3 R⁶, wherein the alkylidene chain is optionally interrupted by -C(R¹¹)₂-, -C(R¹¹)₂C(R¹¹)₂-, -C(R¹¹)=C(R¹¹)-, -C≡C-, -O-,

–S–, –N(R¹¹)₂–, –N(R¹⁰)CO–, –N(R¹⁰)CO₂–, –CON(R¹⁰)–, –C(R¹¹)(OR¹)–, –CO–, –CO₂–, –OC(=O)–, –OC(=O)N(R¹⁰)–, –SO–, –SO₂–, –N(R¹⁰)SO₂– or –SO₂N(R¹⁰)–, and wherein L₂ or a portion thereof optionally forms part of a 3-7 membered ring;

L₃ is a direct link, a C₀₋₆ alkylidene chain optionally substituted by 1-3 R⁶, wherein the alkylidene chain is optionally interrupted by –C(R¹¹)₂–, –C(R¹¹)₂C(R¹¹)₂–, –C(R¹¹)=C(R¹¹)–, –C≡C–, –O–, –S–, –N(R¹¹)–, –N(R¹⁰)CO–, –N(R¹⁰)CO₂–, –CON(R¹⁰)–, –C(R¹¹)(OR¹)–, –CO–, –CO₂–, –OC(=O)–, –OC(=O)N(R¹⁰)–, –SO–, –SO₂–, –N(R¹⁰)SO₂–, or –SO₂N(R¹⁰)–, and wherein L₃ or a portion thereof optionally forms part of a 3-7 membered ring;

R¹ is hydrogen or C₁₋₆ aliphatic;

each R² is independently selected from hydrogen, C₁₋₈ aliphatic, C₆₋₁₀ aryl, C₇₋₁₀ aralkyl, or, when Ring C is a 6-membered aromatic ring R² is a lone electron pair;

R³ is hydrogen, C₁₋₈ aliphatic, C₆₋₁₀ aryl, or C₇₋₁₀ aralkyl;

R⁴ is hydrogen, C₁₋₈ aliphatic, C=O(C₁₋₈ aliphatic), CO₂(C₁₋₈ aliphatic), C(=O)N(R¹⁰)(C₁₋₇ aliphatic), C₆₋₁₀ aryl, heteroaryl, C₇₋₁₂ aralkyl, or heteroaralkyl;

R⁵ is hydrogen or C₁₋₈ aliphatic, or R⁴ and R⁵ taken together with their intervening nitrogen form a substituted or unsubstituted, aromatic or non-aromatic, 4-14 membered monocyclic, bicyclic or tricyclic ring system having, in addition to said intervening nitrogen, 0-4 ring heteroatoms selected from nitrogen, sulfur or oxygen;

Ring A is a 5-membered heteroaryl ring or a 6-membered aromatic ring having 0-2 ring nitrogen atoms, wherein Q and C(=X)N(R¹)-G are attached at ortho positions on Ring A and wherein Ring A is optionally substituted by one to three R⁷;

Ring B is a 6-membered aromatic ring having 0-2 ring nitrogen atoms, wherein Ring B is optionally substituted by one or more R⁸;

Q is a C₂-C₄ alkylidene chain optionally substituted by one to three R⁹, wherein a methylene unit of the alkylidene chain is optionally replaced by –S–, –S(O)–, –SO₂–, –N(R¹)–, –O–, –C(O)–, or –C(S)–;

each R⁶ is independently selected from halo, –OR¹, –CN, –C₁₋₆ aliphatic, –N(R¹⁰)₂, –C=O(C₁₋₅ aliphatic), –CO₂R¹, –CH₂CO₂R¹, or –C(=O)N(R¹⁰)(C₁₋₅ aliphatic);

each R⁷ is independently selected from -halo, –NO₂, –CN, or a substituted or unsubstituted group selected from –R¹², –OR¹, –SR¹², –C₆₋₁₀ aryl, -heterocyclyl, -heteroaryl,

-C₆₋₁₀ aryl)alkyl, -(heterocyclyl)alkyl, -(heteroaryl)alkyl, -N(R¹⁰)₂, -NR¹⁰C(O)R¹, -NR¹⁰C(O)N(R¹⁰)₂, -NR¹⁰CO₂R¹², -CO₂R¹, -C(O)R¹, C(O)N(R¹⁰)₂, -OC(O)N(R¹⁰)₂, -S(O)₂R¹², -SO₂N(R¹⁰).sub- .2, -S(O)₂R¹², -NR¹⁰SO₂N(R¹⁰)₂, -NR¹⁰SO₂R¹², or -C(=NH)-N(R¹⁰)₂ or two adjacent R⁷ taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 ring heteroatoms selected from nitrogen, oxygen or sulfur;

each R⁸ is independently selected from -halo, -NO₂, -CN, or a substituted or unsubstituted group selected from -R¹², -OR¹, -SR¹², -C₆₋₁₀ aryl, -heterocyclyl, -heteroaryl, -C₆₋₁₀ aryl)alkyl, -(heterocyclyl)alkyl, -(heteroaryl)alkyl, -N(R¹⁰)₂, -NR¹⁰C(O)R¹, -NR¹⁰C(O)N(R¹⁰)₂, -NR¹⁰CO₂R¹², -CO₂R¹, -C(O)R¹, -C(O)N(R¹⁰)₂, -OC(O)N(R¹⁰)₂, -S(O)₂R¹², -SO₂N(R¹⁰)₂, -S(O)R¹², -NR¹⁰SO₂N(R¹⁰)₂, -NR¹⁰SO₂R¹², or -C(=NH)-N(R¹⁰)₂, or two adjacent R⁸ taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 ring heteroatoms selected from nitrogen, oxygen or sulfur;

each R⁹ is independently selected from halo, OR¹, CN, C₁₋₆ aliphatic, N(R¹⁰)₂, -C=O(C₁₋₅ aliphatic), CO₂(C₁₋₅ aliphatic), or C(=O)N(R¹⁰)(C₁₋₅ aliphatic), or R⁹ and an R⁷, at a position ortho to Q, are taken together with their intervening atoms form a 5-7 membered unsaturated or partially unsaturated ring having 0-2 ring heteroatoms selected from N, O or S;

each R¹⁰ is independently selected from hydrogen, a substituted or unsubstituted C₁₋₈ aliphatic group, C(=O)R¹, CO₂R¹, SO₂R¹, or two R¹⁰ on the same nitrogen taken together with the nitrogen form a 5-8 membered aromatic or non-aromatic ring having, in addition to the nitrogen, 0-2 ring heteroatoms selected from N, O, or S;

each R¹¹ is independently selected from hydrogen, CO₂R¹², CON(R¹²)₂, OR¹², or a substituted or unsubstituted C₁₋₈ aliphatic group;

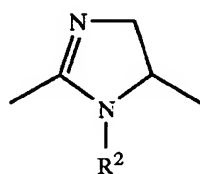
each R¹² is independently selected from a substituted or unsubstituted C₁₋₈ aliphatic group;

and R¹⁴ is hydrogen, C₁₋₈ aliphatic, C₆₋₁₀ aryl, heteroaryl, C₇₋₁₂ aralkyl, heteroaralkyl, heterocyclyl, or R³ and R¹⁴ taken together with their intervening nitrogens form a substituted or unsubstituted, aromatic or non-aromatic, 4-14 membered monocyclic, bicyclic or tricyclic ring system having, in addition to said intervening nitrogen, 0-4 ring heteroatoms selected from nitrogen, sulfur or oxygen.

2. (Original) The compound of claim 1 wherein G is G1.

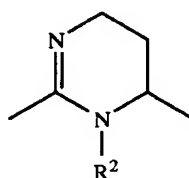
3. (Original) The compound of claim 2 having one or more features selected from the group consisting of:

- (a) X is oxygen;
- (b) L_1 is a C_{2-3} alkylidene chain;
- (c) Q is $-CH_2CH_2-$;
- (d) G1 is G1-a or G1-b:



G1-a

or

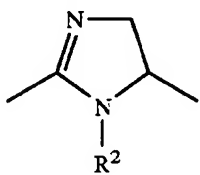


G1-b

- (e) R^4 and R^5 are each independently selected from a C_{1-4} aliphatic group or R^4 and R^5 taken together with their intervening nitrogen form a 5-6 membered ring;
- (f) Ring A is an optionally substituted phenyl or thienyl; and
- (g) Ring B is a substituted phenyl or naphthyl.

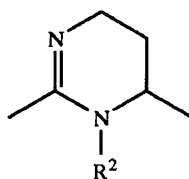
4. (Original) The compound of claim 3 wherein:

- (a) X is oxygen;
- (b) L_1 is a C_{2-3} alkylidene chain;
- (c) Q is $-CH_2CH_2-$;
- (d) G1 is G1-a or G1-b:



G1-a

or



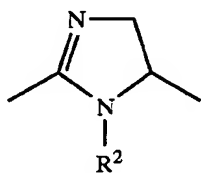
G1-b

- (e) R^4 and R^5 are each independently selected from a C_{1-4} aliphatic group or R^4 and R^5 taken together with their intervening nitrogen form a 5-6 membered ring;
- (f) Ring A is an optionally substituted phenyl or thienyl;

and (g) Ring B is a substituted phenyl or naphthyl.

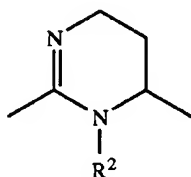
5. (Original) The compound of claim 2 having one or more features selected from the group consisting of:

- (a) X is oxygen;
- (b) L_1 is $-\text{CH}_2\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2\text{CH}_2-$;
- (c) Q is $-\text{CH}_2\text{CH}_2-$;
- (d) G1 is G1-a or G1-b:



G1-a

or

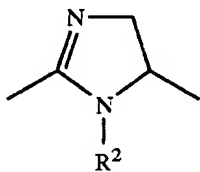


G1-b

- (e) R^4 and R^5 are each independently selected from a C_{1-3} aliphatic group or R^4 and R^5 taken together with their intervening nitrogen form a piperidinyl, pyrrolidinyl, piperazinyl or morpholinyl ring;
- (f) Ring A is an optionally substituted phenyl or thienyl; and
- (g) Ring B is a substituted phenyl or naphthyl.

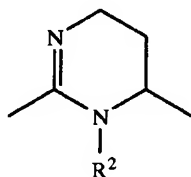
6. (Original) The compound of claim 2 wherein:

- (a) X is oxygen;
- (b) L_1 is $-\text{CH}_2\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2\text{CH}_2-$;
- (c) Q is $-\text{CH}_2\text{CH}_2-$;
- (d) G1 is G1-a or G1-b:



G1-a

or



G1-b

- (e) R^4 and R^5 are each independently selected from a C_{1-3} aliphatic group or R^4 and R^5 taken together with their intervening nitrogen form a piperidinyl, pyrrolidinyl, piperazinyl or morpholinyl ring;

- (f) Ring A is an optionally substituted phenyl or thienyl; and
- (g) Ring B is a substituted phenyl or naphthyl.

7. (Original) The compound of claim 1 wherein G is G2.

8. (Original) The compound of claim 7 having one or more features selected from the group consisting of:

- (a) X is oxygen;
- (b) L₂ is a C₃₋₄ alkylidene chain;
- (c) Q is -CH₂CH₂-;
- (d) (i) R⁴ and R⁵ are each independently selected from a C₁₋₄ aliphatic group, or (ii) R⁴ And R⁵ taken together with their intervening nitrogen form a 5-6 membered ring, or (iii) R⁵ is a C₁₋₄ aliphatic group and R⁴ is aryl, aralkyl, heteroaryl, or heteroaralkyl;
- (e) Ring A is an optionally substituted phenyl or thienyl; and
- (f) Ring B is a substituted phenyl or naphthyl.

9. (Original) The compound of claim 7 wherein:

- (a) X is oxygen;
- (b) L₂ is a C₃₋₄ alkylidene chain;
- (c) Q is -CH₂CH₂-;
- (d) (i) R⁴ and R⁵ are each independently selected from a C₁₋₄ aliphatic group, or (ii) R⁴ and R⁵ taken together with their intervening nitrogen form a 5-6 membered ring, or (iii) R⁵ is a C₁₋₄ aliphatic group and R⁴ is aryl, aralkyl, heteroaryl, or heteroaralkyl;
- (e) Ring A is phenyl or thienyl; and
- (f) Ring B is phenyl or naphthyl.

10. (Original) The compound of claim 7 having one or more features selected from the group consisting of:

- (a) X is oxygen;
- (b) L₂ is -CH₂CH₂CH₂- or -CH(CH₃)CH₂CH₂-;
- (c) Q is -CH₂CH₂-;

- (d) R^4 and R^5 are each independently selected from a C_{1-3} aliphatic group or R^4 and R^5 taken together with their intervening nitrogen form a piperidinyl, pyrrolidinyl, piperazinyl or morpholinyl ring;
- (e) Ring A is an optionally substituted phenyl or thienyl; and
- (f) Ring B is a substituted phenyl or naphthyl.

11. (Original) The compound of claim 7 wherein:

- (a) X is oxygen;
- (b) L_2 is $-CH_2CH_2CH_2-$ or $-CH(CH_3)CH_2CH_2-$;
- (c) Q is $-CH_2CH_2-$;
- (d) R^4 and R^5 are each independently selected from a C_{1-3} aliphatic group or R^4 and R^5 taken together with their intervening nitrogen form a piperidinyl, pyrrolidinyl, piperazinyl or morpholinyl ring;
- (e) Ring A is an optionally substituted phenyl or thienyl; and
- (f) Ring B is a substituted phenyl or naphthyl.

12. (Original) The compound of claim 1 wherein G is G^3 .

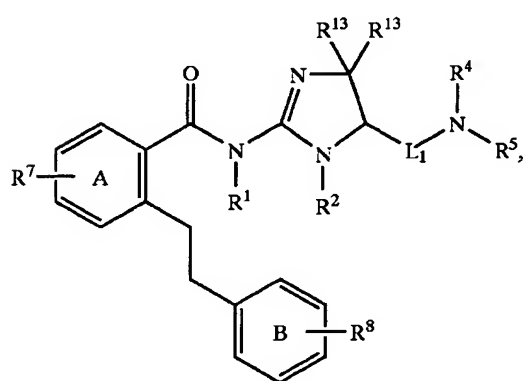
13. (Original) The compound of claim 12 having one or more features selected from the group consisting of:

- (a) X is oxygen;
- (b) L_3 is selected from a direct link, $-CH_2-$, $-CH(R^6)-$, $-CH_2CH_2-$, $-CH_2CH_2CH_2-$, $-CH_2CH_2CH_2CH_2-$;
- (c) Q is $-CH_2CH_2-$;
- (d) R^5 is C_{1-3} alkyl, CO_2H , $CO_2(C_{1-6}alkyl)$, CH_2CO_2H , or $CH_2CO_2(C_{1-6}alkyl)$;
- (e) R^{14} is selected from a C_{1-6} aliphatic group or a 5-6 membered heterocyclic ring;
- (f) Ring A is an optionally substituted phenyl or thienyl; and
- (g) Ring B is a substituted phenyl or naphthyl.

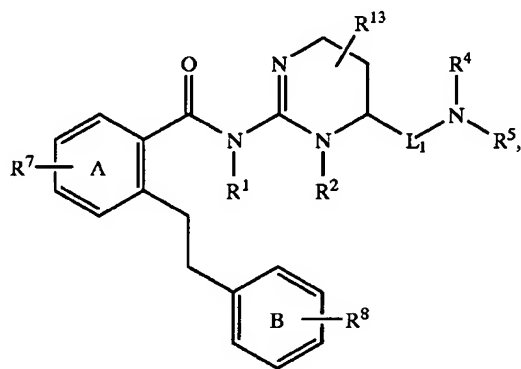
14. (Original) The compound of claim 12 having one or more features selected from the group consisting of:

- (a) X is oxygen;
- (b) L_3 is $-\text{CH}_2-$ or $-\text{CH}(\text{R}^6)-$;
- (c) R^6 is C_{1-3} alkyl, CO_2H , $\text{CO}_2(\text{C}_{1-6}$ alkyl), $\text{CH}_2\text{CO}_2\text{H}$, or $\text{CH}_2\text{CO}_2(\text{C}_{1-6}$ alkyl);
- (d) R^{14} is a 5-6 membered heterocyclic ring having a ring nitrogen and 0-1 additional ring heteroatoms selected from N, O or S;
- (e) Q is $-\text{CH}_2\text{CH}_2-$;
- (f) Ring A is an optionally substituted phenyl or thienyl; and
- (g) Ring B is a substituted phenyl or naphthyl.

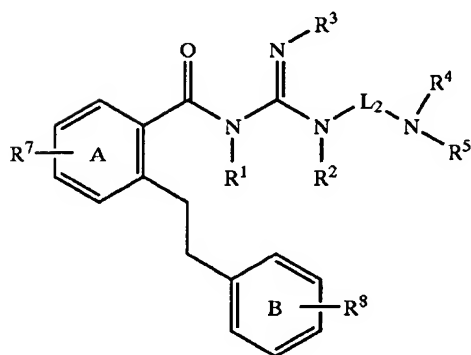
15. (Original) The compound of claim 1 represented by formulae II-A, II-B, II-C or II-D:



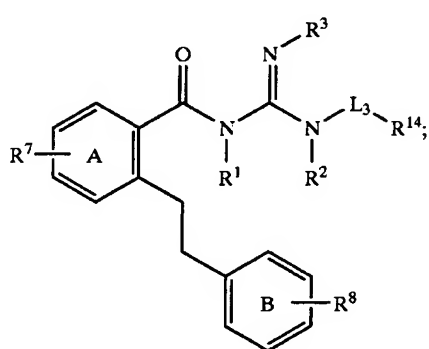
II-A



II-B



II-C



II-D

or

wherein:

R^1 and R^2 are each hydrogen;

R^3 is hydrogen;

L_1 is $-\text{CH}_2\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2\text{CH}_2-$;

L_2 is $-\text{CH}_2\text{CH}_2\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2-$, $-\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2-$, or $-\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{CH}_2-$;

L_3 is a direct link, $-\text{CH}_2-$, $-\text{CH}(\text{R}^6)-$, $-\text{CH}_2\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{CH}_2-$, or $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2-$;

R^6 is C_{1-3} alkyl, CO_2H , $\text{CO}_2(\text{C}_{1-6}$ alkyl), $\text{CH}_2\text{CO}_2\text{H}$, or $\text{CH}_2\text{CO}_2(\text{C}_{1-6}$ alkyl);

R^7 is absent or is -halo, $-\text{NO}_2$, $-\text{CN}$, $-\text{R}^{12}$, $-\text{OR}^1$, $-\text{SR}^{12}$, $-\text{C}_{6-10}$ aryl, -heterocyclyl, -heteroaryl, $-(\text{C}_{6-10}$ aryl)alkyl, -(heterocyclyl)alkyl, -(heteroaryl)alkyl, $-\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{C}(\text{O})\text{R}^1$, $-\text{NR}^{10}\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{CO}_2\text{R}^{12}$, $-\text{CO}_2\text{R}^1$, $-\text{C}(\text{O})\text{R}^1$, $-\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{OC}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{S}(\text{O})_2\text{R}^{12}$, $-\text{SO}_2\text{N}(\text{R}^{10})_2$, $-\text{S}(\text{O})\text{R}^{12}$, $-\text{NR}^{10}\text{SO}_2\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{SO}_2\text{R}^{12}$, or $-\text{C}(=\text{NH})-\text{N}(\text{R}^{10})_2$, or two adjacent R^7 taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 heteroatoms selected from nitrogen, oxygen or sulfur;

R^8 is -halo, $-\text{NO}_2$, $-\text{CN}$, or a substituted or unsubstituted group selected from $-\text{R}^{12}$, $-\text{OR}^1$, $-\text{SR}^{12}$, $-\text{C}_{6-10}$ aryl, -heterocyclyl, -heteroaryl, $-(\text{C}_{6-10}$ aryl)alkyl, -(heterocyclyl)alkyl, -heteroaryl)alkyl, $-\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{C}(\text{O})\text{R}^1$, $-\text{NR}^{10}\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{CO}_2\text{R}^{12}$, $-\text{CO}_2\text{R}^1$, $-\text{C}(\text{O})\text{R}^1$, $-\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{OC}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{S}(\text{O})_2\text{R}^{12}$, $-\text{SO}_2\text{N}(\text{R}^{10})$.sub- .2, $-\text{S}(\text{O})\text{R}^{12}$, $-\text{NR}^{10}\text{SO}_2\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{SO}_2\text{R}^{12}$, or $-\text{C}(=\text{NH})-\text{N}(\text{R}^{10})_2$, or two adjacent R^8 taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 heteroatoms selected from nitrogen, oxygen or sulfur;

R^4 and R^5 (i) are each independently selected from a C_{1-4} aliphatic group, or (ii) R^4 and R^5 taken together with their intervening nitrogen form a 5-6 membered ring, or (iii) R^4 is a C_{1-4} aliphatic group and R^5 is aryl, aralkyl, heteroaryl, or heteroaralkyl;

R^{14} is a C_{1-6} aliphatic or 5-6 membered heterocyclic ring or R^{13} and R^{14} taken together with their intervening nitrogens form a 4-6 membered ring;

each R^{13} is independently selected from hydrogen, C_{1-6} aliphatic, or a substituent selected from the group consisting of COR^1 , CO_2R^1 , CN , $-\text{N}(\text{R}^{10})_2$, $\text{CON}(\text{R}^{10})_2$, $-\text{OR}^1$, or two R^{13} on the same carbon taken together form $=\text{O}$, or two R^{13} taken together with their intervening atoms form a 3-7 membered ring having 0-2 ring heteroatoms;

each R^{10} is independently selected from hydrogen, a substituted or unsubstituted C_{1-8} aliphatic group, $\text{C}(=\text{O})\text{R}^1$, CO_2R^1 , SO_2R^1 , or two R^{10} on the same nitrogen taken together

with the nitrogen form a 5-8 membered aromatic or non-aromatic ring having, in addition to the nitrogen, 0-2 ring heteroatoms selected from N, O, or S;
each R¹¹ is independently selected from hydrogen or an optionally substituted C₁₋₈ aliphatic group; and
each R¹² is independently selected from a substituted or unsubstituted C₁₋₈ aliphatic group.

16. (Original) The compound of claim 15 wherein:

R¹ and R² are each hydrogen;

R³ is hydrogen;

L₁ is -CH₂CH₂- or -CH₂CH₂CH₂-;

L₂ is -CH₂CH₂CH₂-, -CH₂CH₂CH₂CH₂-, -CH(CH₃)CH₂CH₂-, or -CH(CH₃)CH₂CH₂CH₂-;

L₃ is a direct link, -CH₂-, -CH(R⁶)-, -CH₂CH₂-, -CH₂CH₂CH₂-, or -CH₂CH₂CH₂CH₂-;

R⁶ is CO₂H, CO₂(C₁₋₆ alkyl), CH₂CO₂H, or CH₂CO₂(C₁₋₆ alkyl);

R⁷ is absent or is -halo, -CN, -R¹², -OR¹, -SR¹², -N(R¹⁰)₂, -NR¹⁰C(O)R¹,
-NR¹⁰C(O)N(R¹⁰)₂, -NR¹⁰CO₂R¹², -CO₂R¹, -C(O)R¹, -C(O)N(R¹⁰)₂, -OC(O)N(R¹¹)₂,
-S(O)₂R¹², -SO₂N(R¹⁰)₂, -S(O)R¹², -NR¹⁰SO₂N(R¹⁰)₂, or -NR¹⁰SO₂R¹²;

R⁸ is -halo, -CN, or a substituted or unsubstituted group selected from -R¹², -OR¹, -SR¹²,
-N(R¹⁰)₂, -NR¹, -C(O)R¹, -NR¹⁰CO₂R¹², -CO₂R¹, -C(O), -C(O)N(R¹⁰)₂,
-OC(O)N(R¹⁰)R¹², -S(R¹⁰)₂R¹², -SO₂N(R¹⁰)₂, -S(O)R¹², -NR¹⁰SO₂N(R¹⁰)₂, or
-NR¹⁰SO₂R¹², or two adjacent R⁸ taken together with their intervening atoms form a 5-6
membered unsaturated or partially unsaturated ring having 0-2 heteroatoms selected from
nitrogen, oxygen or sulfur;

R⁴ and R⁵ are each independently selected from C₁₋₃ alkyl or R⁴ and R⁵ taken together with
their intervening nitrogen form a 5-6 membered ring;

R¹⁴ is a C₁₋₆ aliphatic or a 5-6 membered heterocyclic ring having a ring nitrogen and 0-1
additional ring heteroatoms selected from N, O or S;

each R¹³ is hydrogen;

each R¹⁰ is hydrogen;

each R¹¹ is independently selected from hydrogen or an optionally substituted C₁₋₅ aliphatic
group;

and each R^{12} is independently selected from a substituted or unsubstituted C_{1-5} aliphatic group.

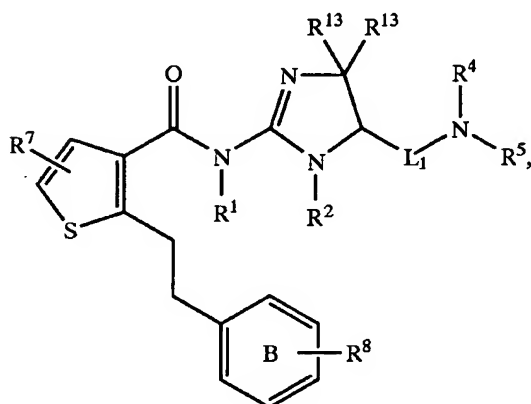
17. (Original) The compound of claim 16 wherein:

R^7 is absent or is halo;

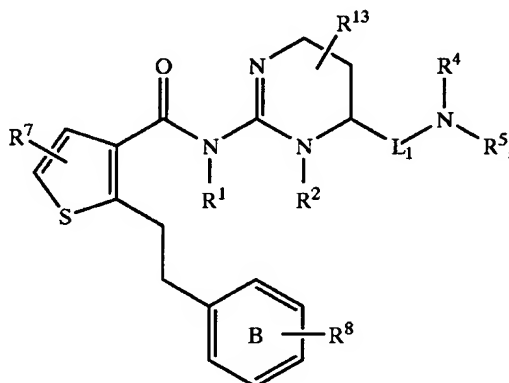
Ring B is a phenyl ring having two R^8 substituents that are para to one another or Ring B is a naphthyl ring;

and each R^8 is independently selected from halo, C_{1-4} alkyl, C_{1-3} alkoxy, $CO(C_{1-3}$ alkyl), $CONH(C_{1-3}$ alkyl), $SO_2(C_{1-3}$ alkyl), or $SO_2NH(C_{1-3}$ alkyl).

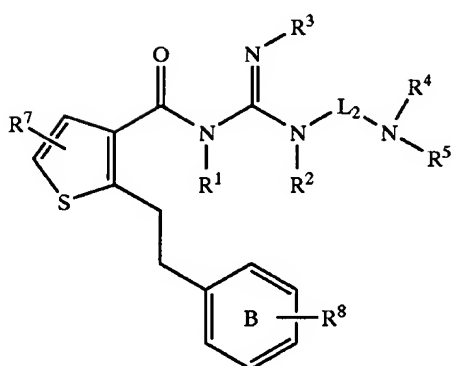
18. (Original) The compound of claim 1 represented by formulae III-A, III-B, III-C or III-D:



III-A

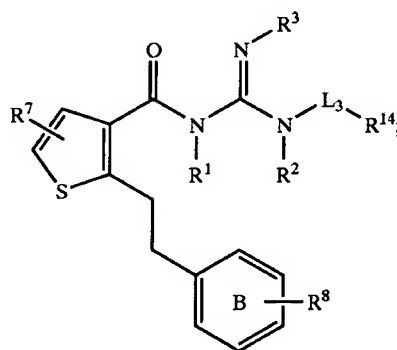


III-B



III-C

or



III-D

wherein:

R^1 , and R^2 are each hydrogen;
 R^3 is hydrogen;
 L_1 is $-\text{CH}_2\text{CH}_2-$ or $-\text{CH}_2\text{CH}_2\text{CH}_2-$;
 L_2 is $-\text{CH}_2\text{CH}_2\text{CH}_2-$, $-\text{CH}_2\text{CH}_2\text{CH}_2\text{CH}_2-$, $-\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2-$, or $-\text{CH}(\text{CH}_3)\text{CH}_2\text{CH}_2\text{CH}_2-$;
 L_3 is a direct link, $-\text{CH}_2-$, or $-\text{CH}_2\text{CH}_2-$;
 R^7 is absent or is -halo, $-\text{CO}_2R^1$, $-\text{C}(\text{O})R^1$, $-\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, or two adjacent R^7 taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 heteroatoms selected from nitrogen, oxygen or sulfur;
 R^8 is -halo, $-\text{NO}_2$, $-\text{CN}$, or a substituted or unsubstituted group selected from $-\text{R}^{12}$, $-\text{OR}^1$, $-\text{SR}^{12}$, $-\text{C}_{6-10}$ aryl, -heterocyclyl, -heteroaryl, $-(\text{C}_{6-10}$ aryl)alkyl, -(heterocyclyl)alkyl, -heteroaryl)alkyl, $-\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{C}(\text{O})R^1$, $-\text{NR}^{10}\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{CO}_2R^{12}$, $-\text{CO}_2R^1$, $-\text{C}(\text{O})R^1$, $-\text{C}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{OC}(\text{O})\text{N}(\text{R}^{10})_2$, $-\text{S}(\text{O})_2R^{12}$, $-\text{SO}_2\text{N}(\text{R}^{10})_2$, $-\text{S}(\text{O})R^{12}$, $-\text{NR}^{10}\text{SO}_2\text{N}(\text{R}^{10})_2$, $-\text{NR}^{10}\text{SO}_2R^{12}$, or $-\text{C}(=\text{NH})-\text{N}(\text{R}^{10})_2$, or two adjacent R^8 taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 heteroatoms selected from nitrogen, oxygen or sulfur;
 R^4 and R^5 are each independently selected from C_{1-3} alkyl or R^4 and R^5 taken together with their intervening nitrogen form a 5-6 membered ring;
 R^{14} is a C_{1-6} aliphatic or a 5-6 membered heterocyclic ring having a ring nitrogen and 0-1 additional ring heteroatoms selected from N, O or S;
each R^{13} is independently selected from hydrogen, C_{1-6} aliphatic, or a substituent selected from the group consisting of COR^1 , CO_2R^1 , CN , $-\text{N}(\text{R}^{10})_2$, $\text{CON}(\text{R}^{10})_2$, $-\text{OR}^1$, or two R^{13} on the same carbon taken together form $=\text{O}$, or two R^{13} taken together with their intervening atoms form a 3-7 membered ring having 0-2 ring heteroatoms;
each R^{10} is independently selected from hydrogen, a substituted or unsubstituted C_{1-8} aliphatic group, $\text{C}(=\text{O})R^1$, CO_2R^1 , SO_2R^1 , or two R^{10} on the same nitrogen taken together with the nitrogen form a 5-8 membered aromatic or non-aromatic ring having, in addition to the nitrogen, 0-2 ring heteroatoms selected from N, O, or S;
each R^{11} is independently selected from hydrogen or an optionally substituted C_{1-8} aliphatic group;
and each R^{12} is independently selected from a substituted or unsubstituted C_{1-8} aliphatic group.

19. (Original) The compound of claim 18 wherein:

R¹, R², and R³ are each hydrogen;

L₁ is -CH₂CH₂- or -CH₂CH₂ CH₂-;

L₂ is -CH₂CH₂CH₂-, -CH₂CH₂CH₂CH₂-, -CH(CH₃)CH₂CH₂-, or -CH(CH₃)CH₂ CH₂CH₂;

L₃ is a direct link, -CH₂-, or -CH₂CH₂-;

R⁷ is absent;

R⁸ is -halo, -CN, or a substituted or unsubstituted group selected from -R¹², -OR¹, -SR¹², -N(R¹⁰)₂, -NR¹⁰C(O)R¹, -NR¹⁰CO₂R¹², -CO₂R¹, -C(O)R¹, -O(O)N(R¹⁰)₂, -OC(O)N(R¹⁰)₂, -S(O)₂R¹², -SO₂N(R¹⁰)₂, -S(O)R¹², -NR¹⁰SO₂N(R¹⁰)₂, or -NR¹⁰SO₂R¹², or two adjacent R⁸ taken together with their intervening atoms form a 5-6 membered unsaturated or partially unsaturated ring having 0-2 heteroatoms selected from nitrogen, oxygen or sulfur;

R⁴ and R⁵ are each independently selected from C₁₋₃ alkyl or R⁴ and R⁵ taken together with their intervening nitrogen form a 5-6 membered ring;

R¹⁴ is a C₁₋₆ aliphatic or a 5-6 membered heterocyclic ring having a ring nitrogen and 0-1 additional ring heteroatoms selected from N, O or S;

each R¹³ is hydrogen;

each R¹⁰ is hydrogen;

each R¹¹ is independently selected from hydrogen or an optionally substituted C₁₋₅ aliphatic group;

and each R¹² is independently selected from a substituted or unsubstituted C₁₋₅ aliphatic group.

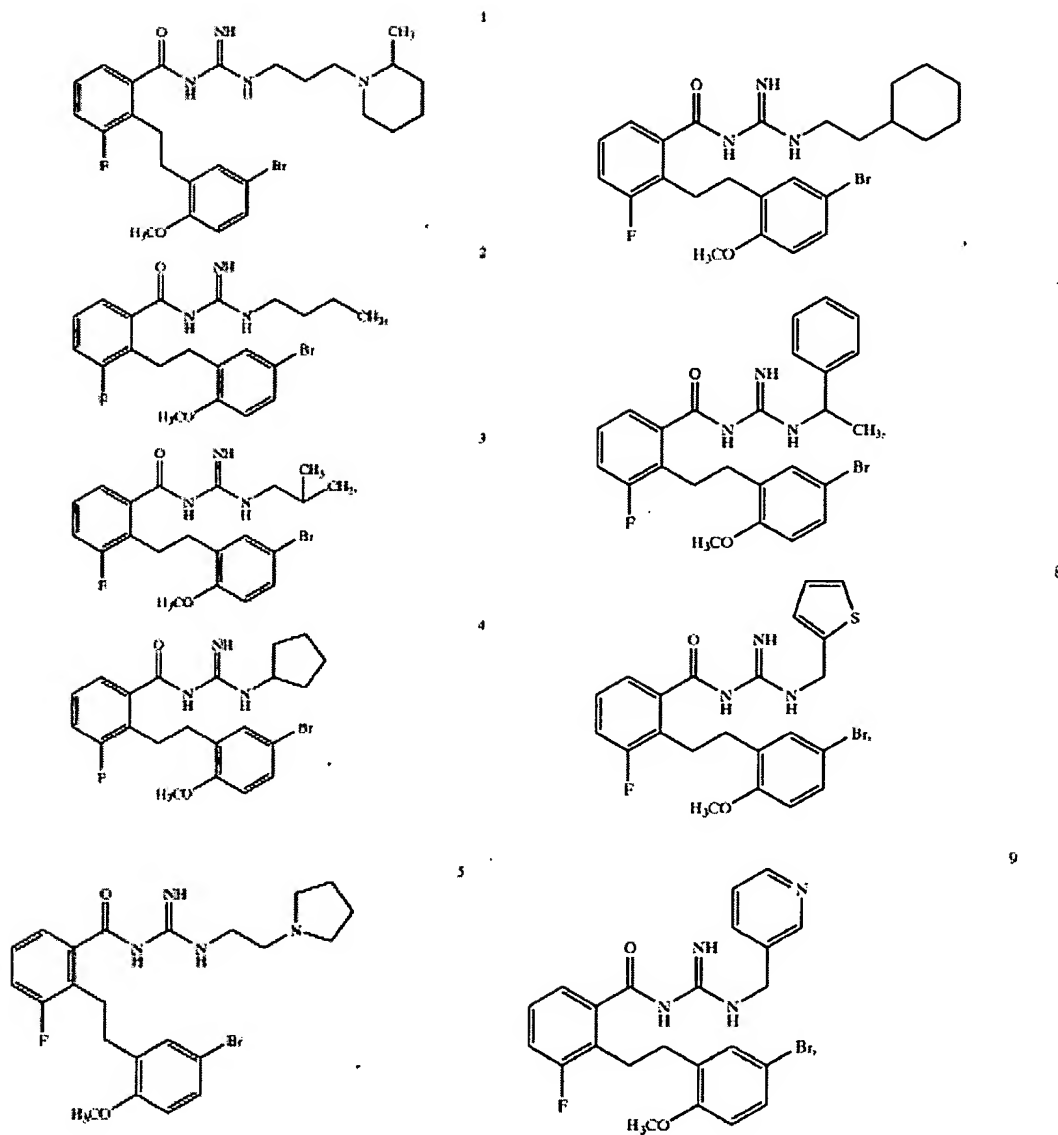
20. (Original) The compound of claim 18 wherein:

Ring B is a phenyl ring having two R⁸ substituents that are para to one another or Ring B is a naphthyl ring;

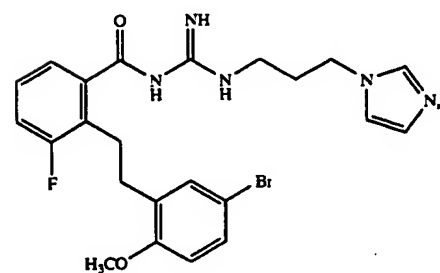
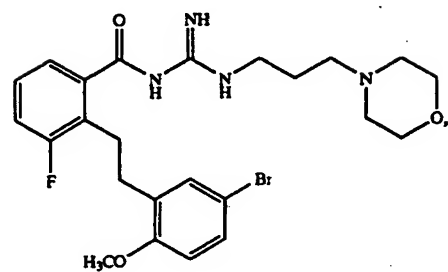
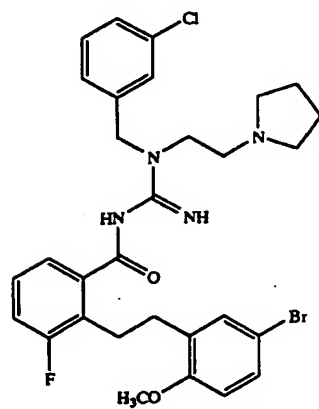
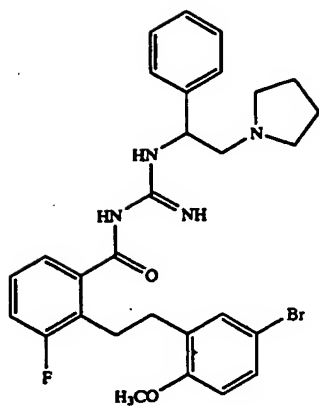
and Each R⁸ is independently selected from halo, C₁₋₄ alkyl, C₁₋₃ alkoxy, CO(C₁₋₃ alkyl), CONH(C₁₋₃ alkyl), SO₂(C₁₋₃ alkyl), or SO₂NH(C₁₋₃ alkyl).

21. (Presently Amended)
consisting of:

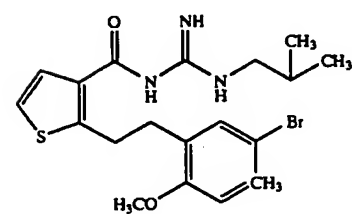
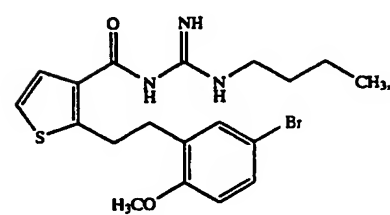
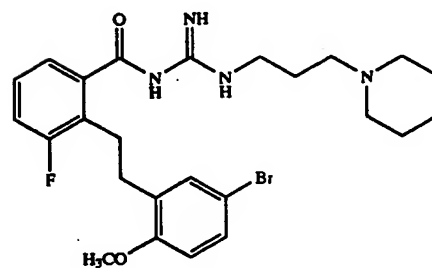
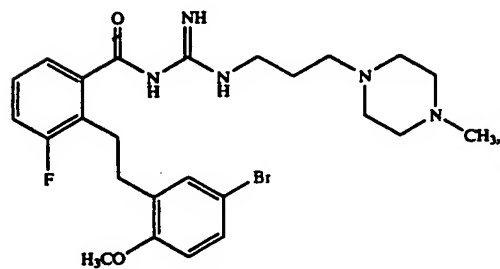
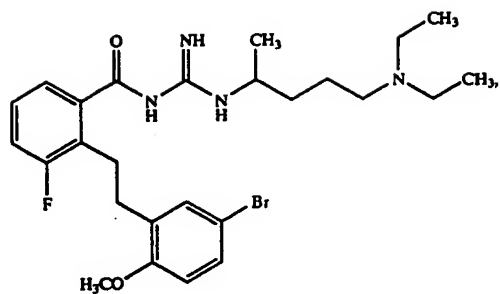
A compound according to claim 1 selected from the group



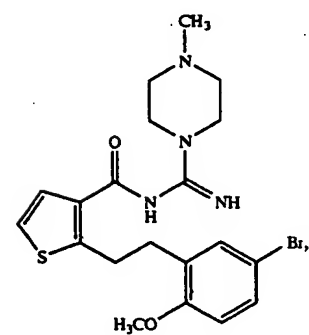
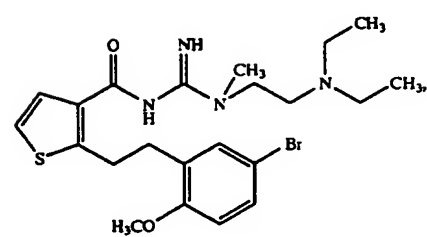
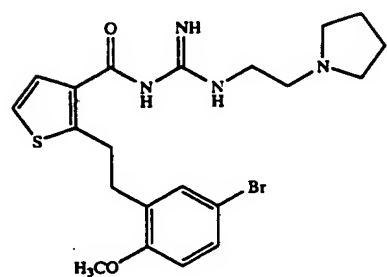
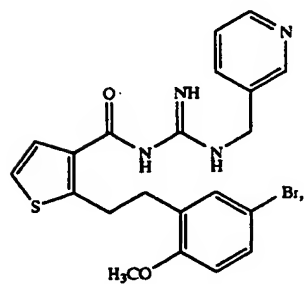
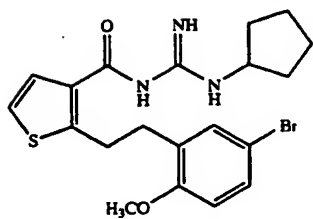
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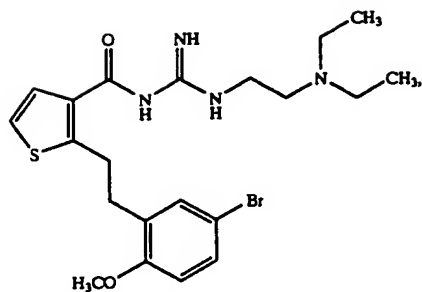


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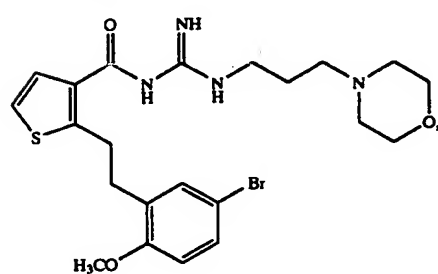


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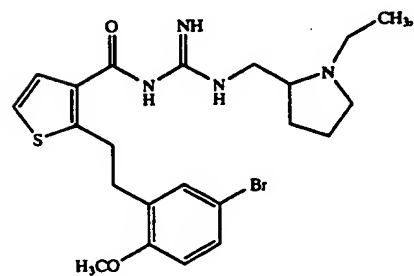
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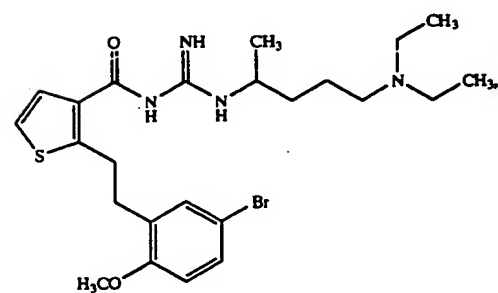
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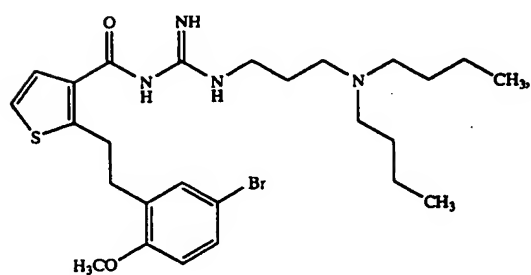
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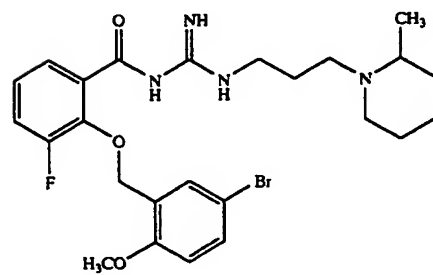
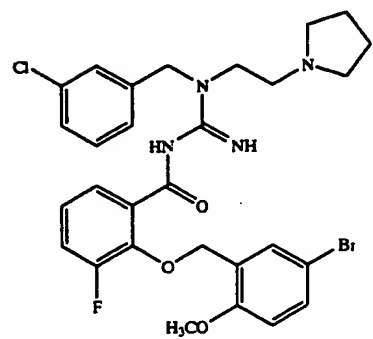
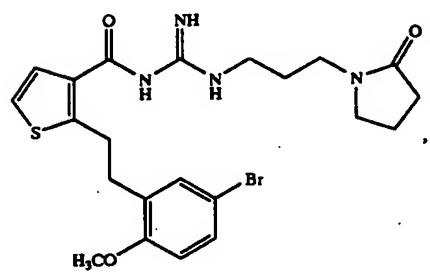
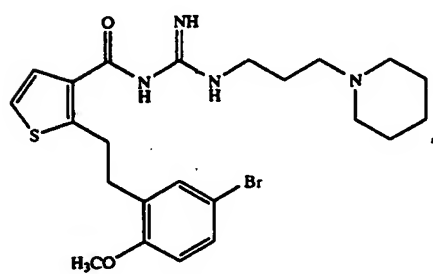
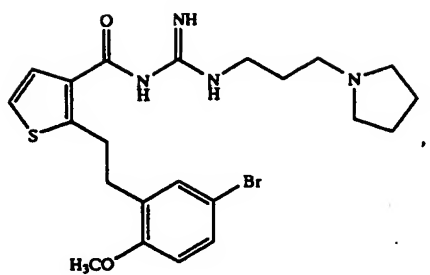
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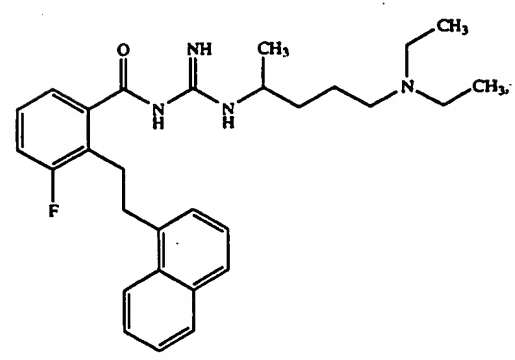
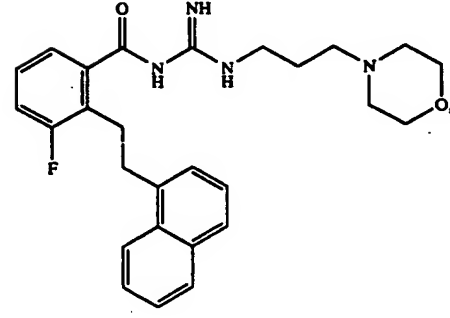
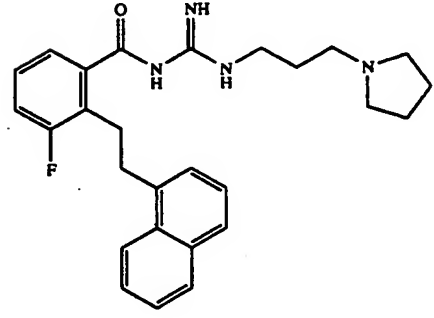
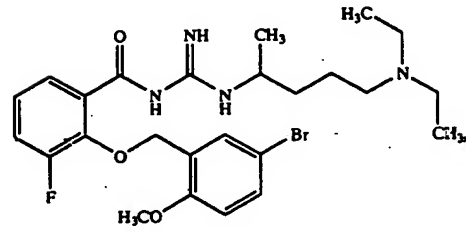
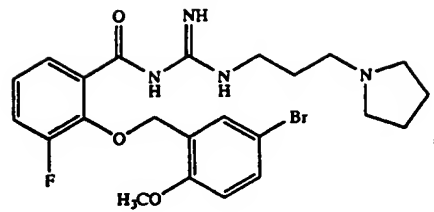
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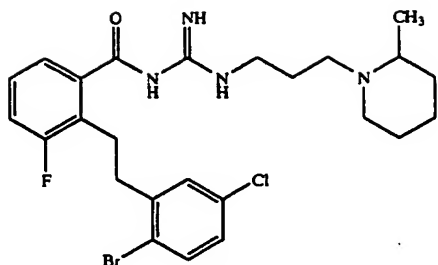
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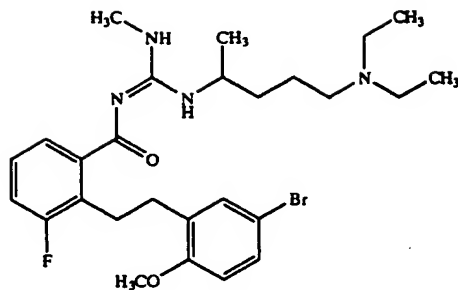


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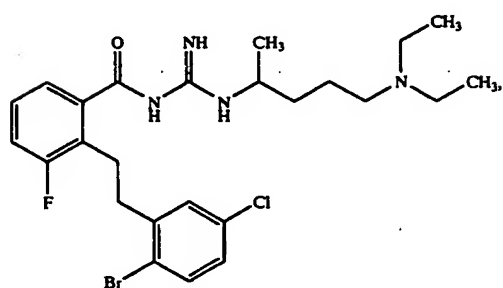


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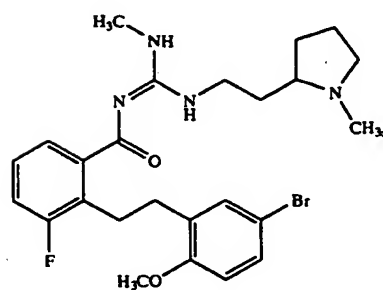
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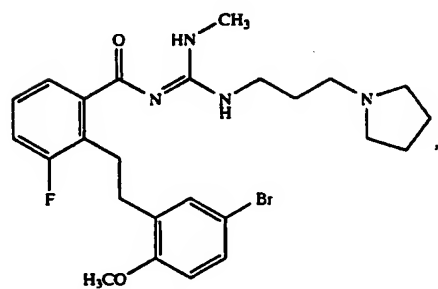
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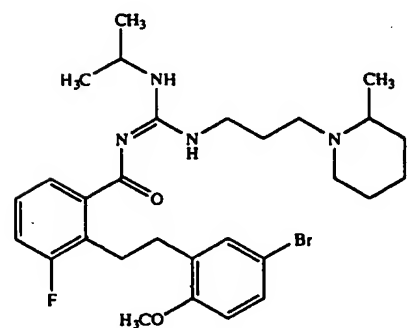
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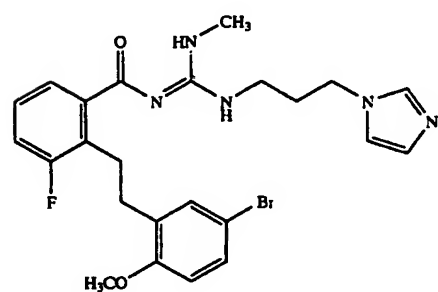
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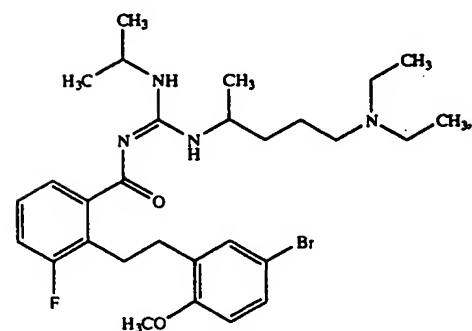
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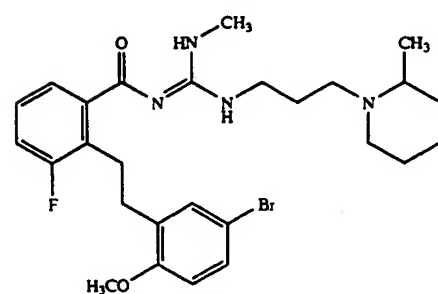
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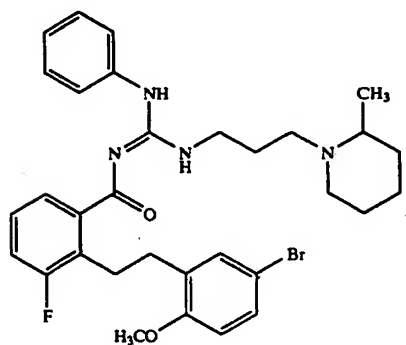
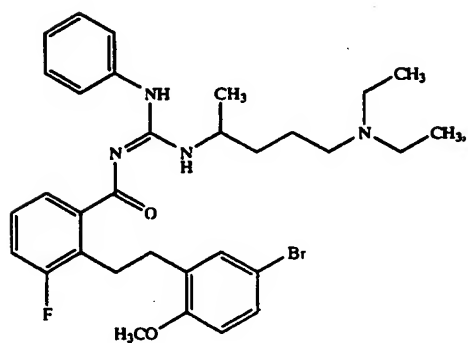
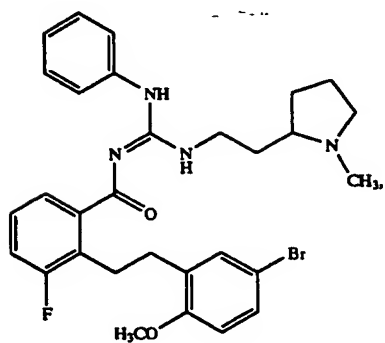
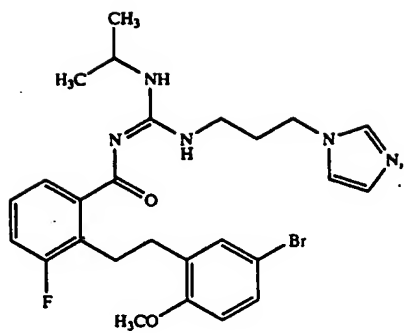


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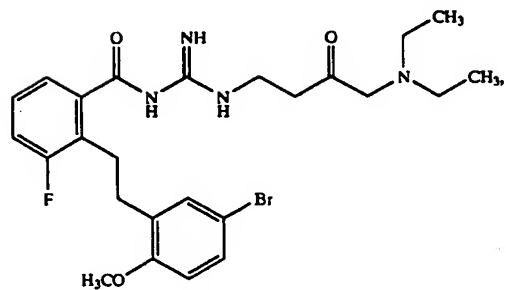
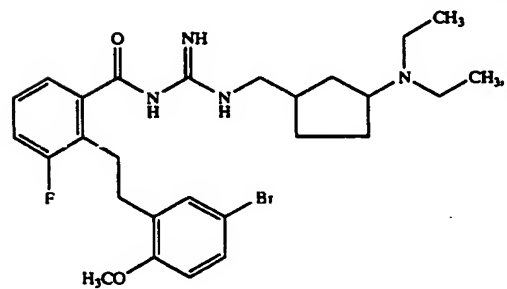
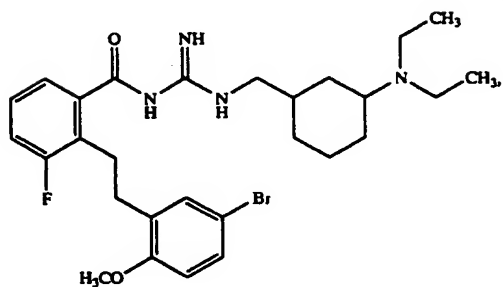
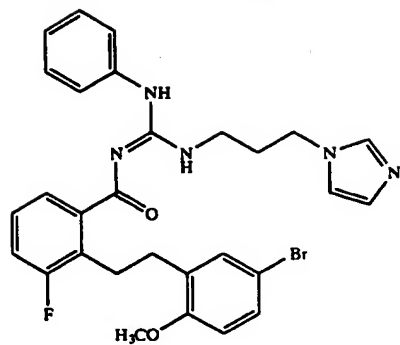


43

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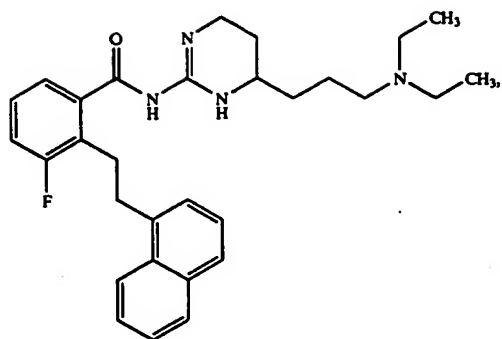


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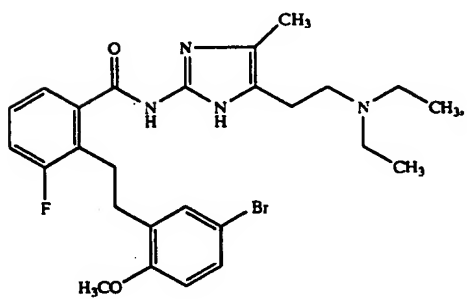


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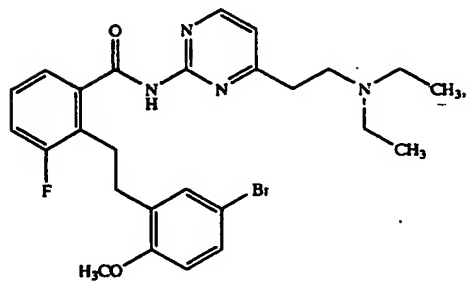
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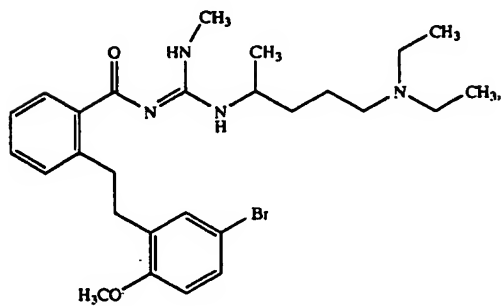
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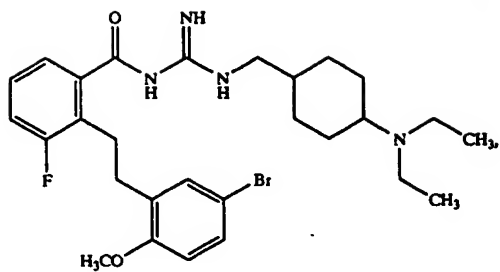


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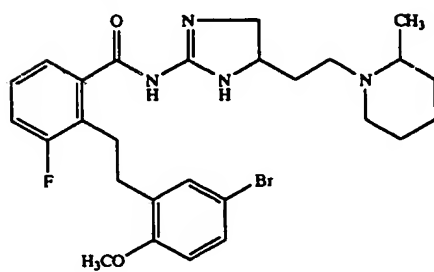


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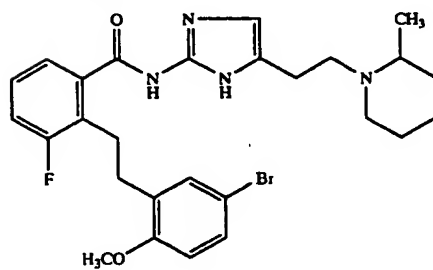
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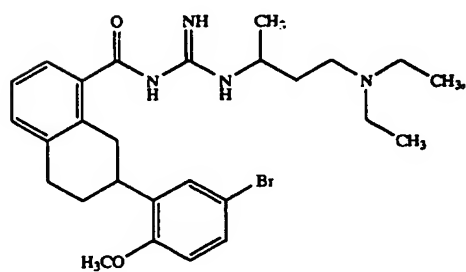
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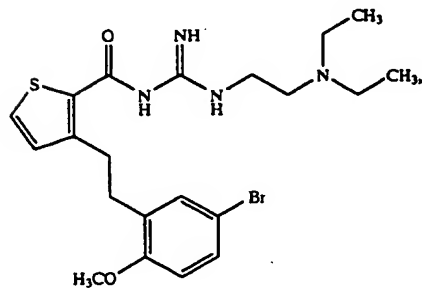
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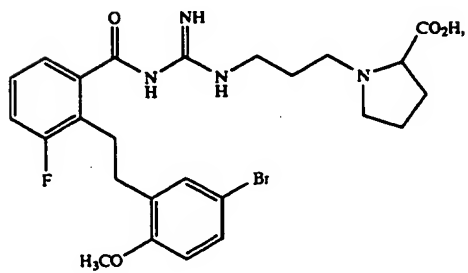
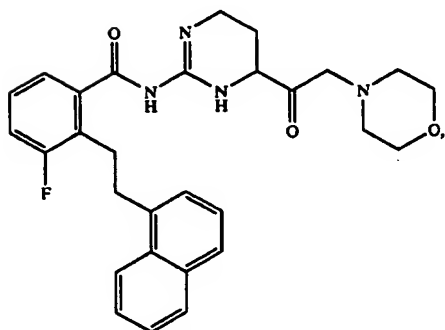
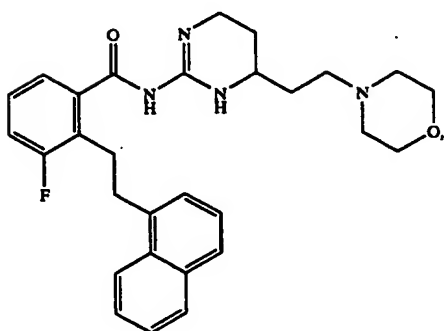
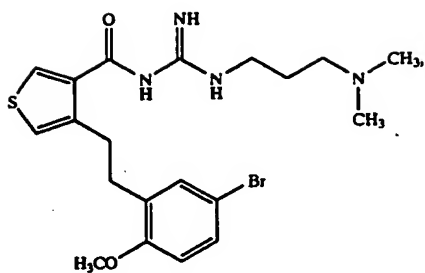
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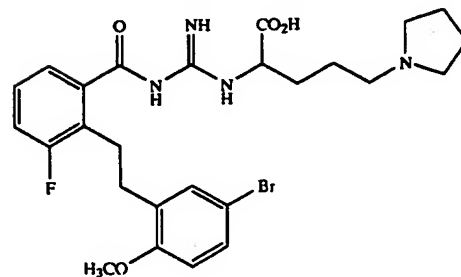
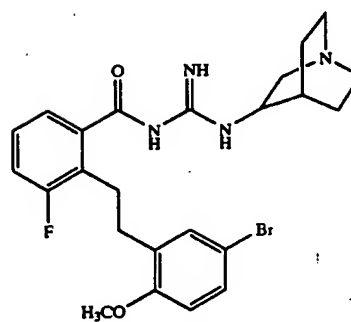
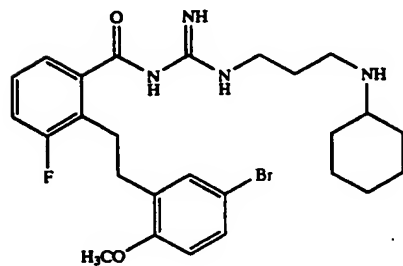
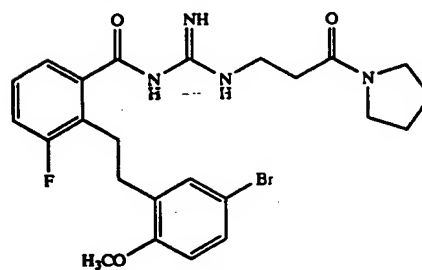
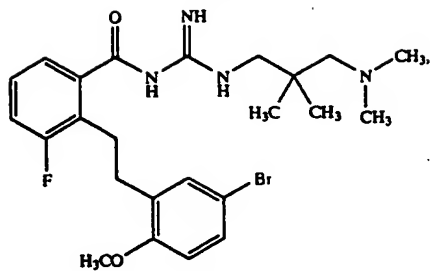
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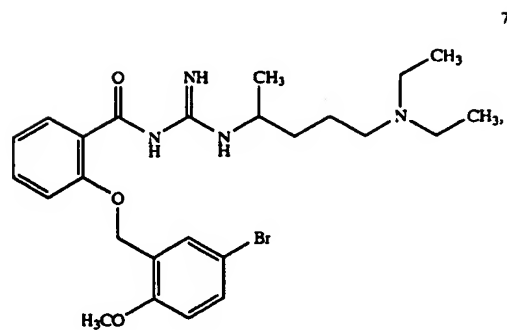
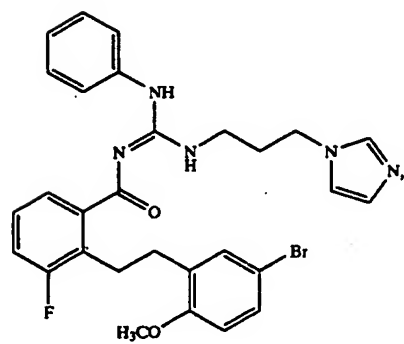
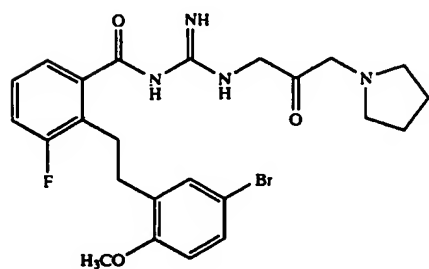
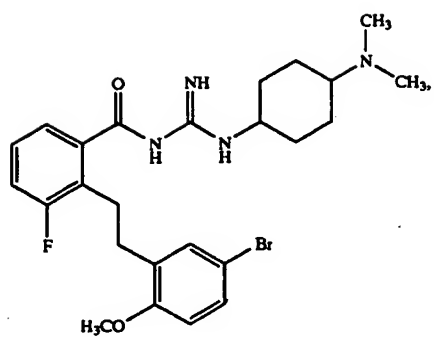
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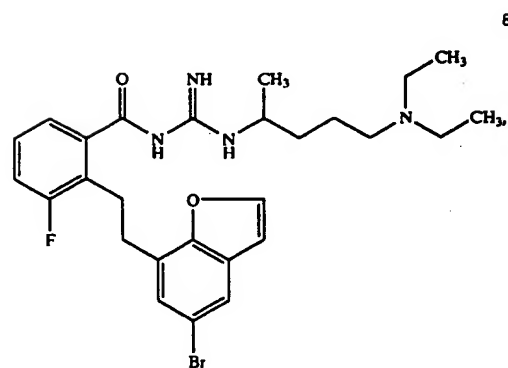
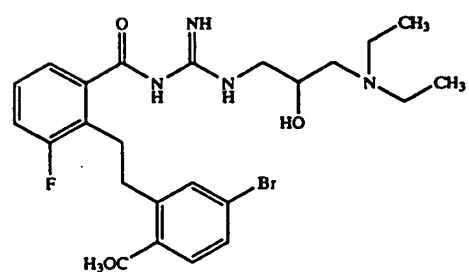
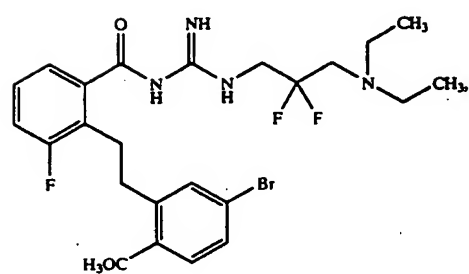
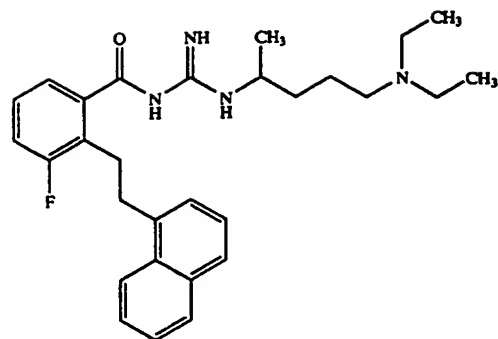
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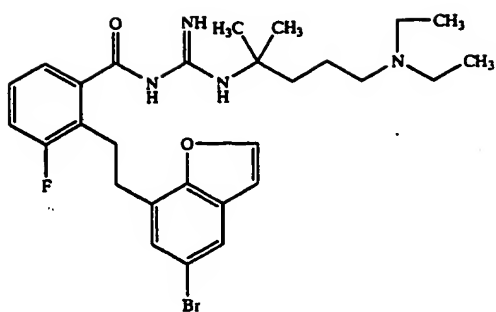
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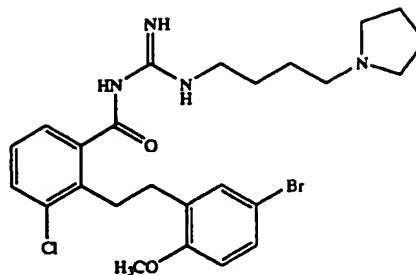


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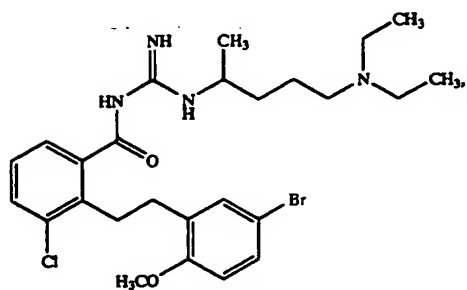


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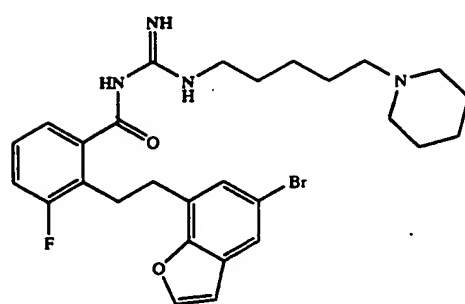
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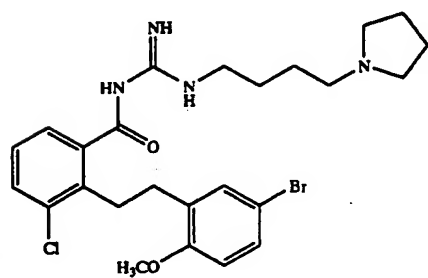
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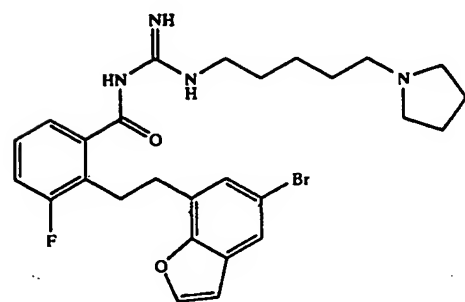
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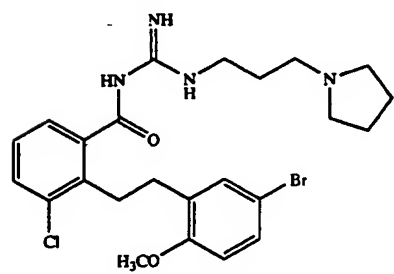
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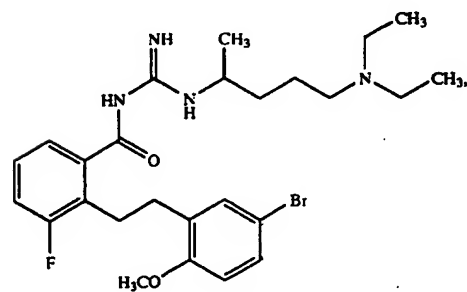
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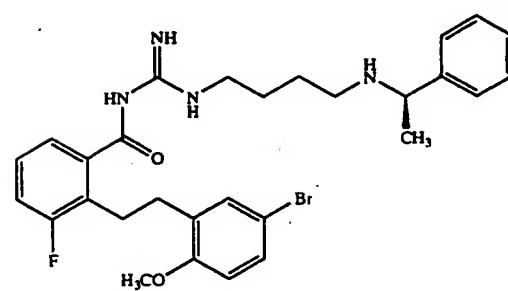
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85

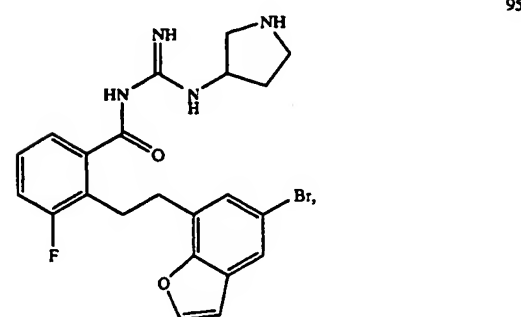
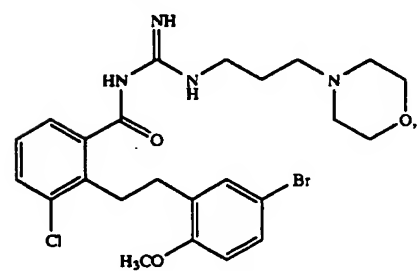
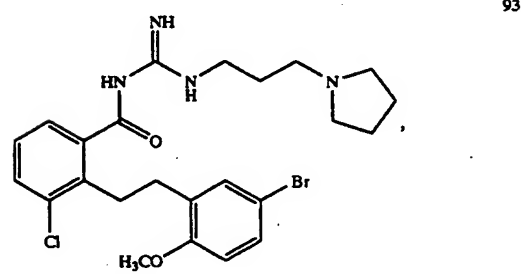
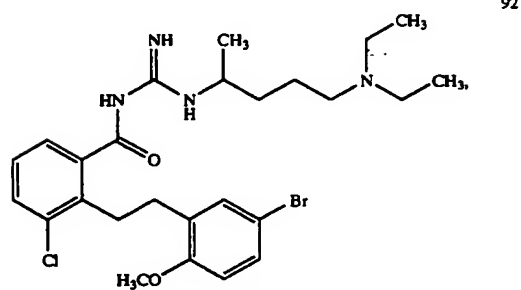
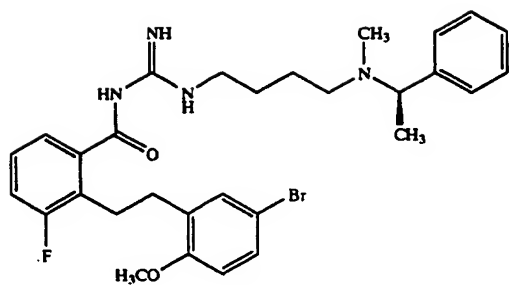


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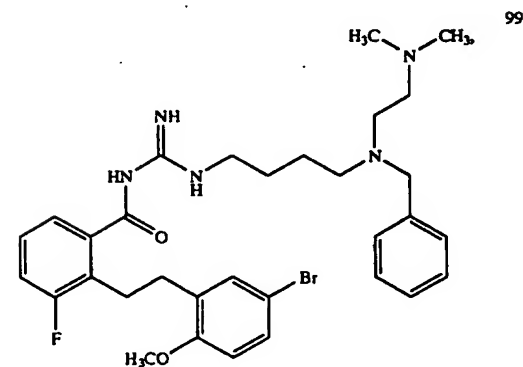
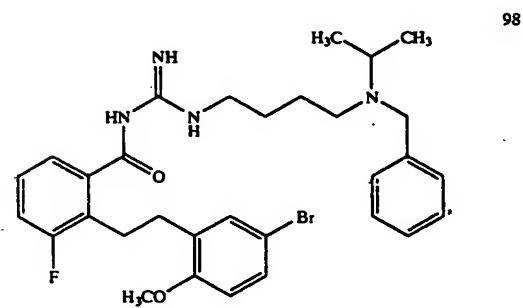
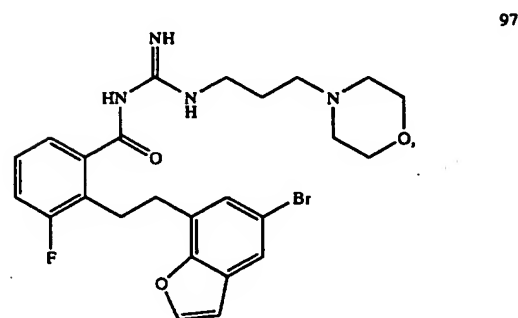
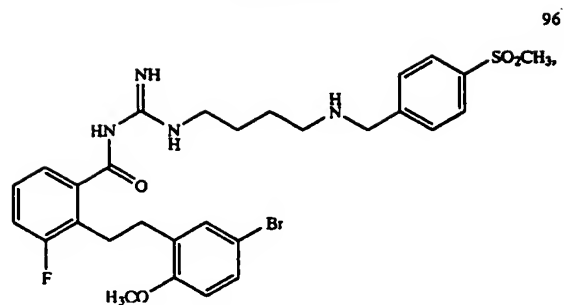


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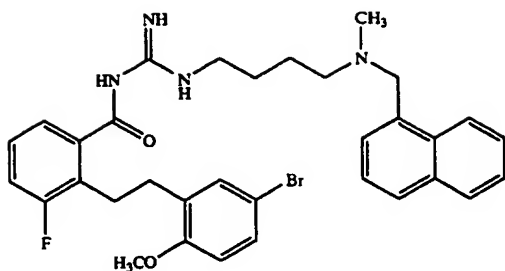
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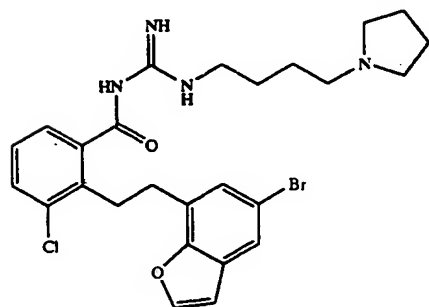
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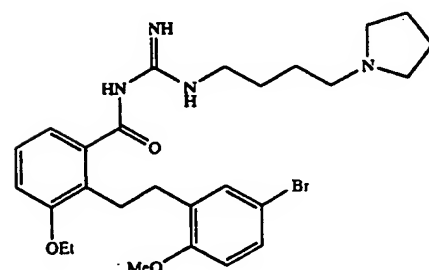
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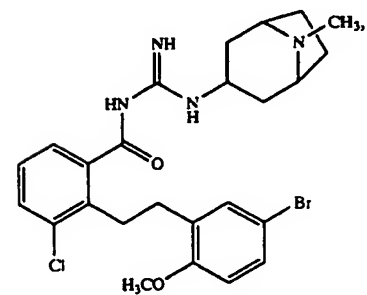
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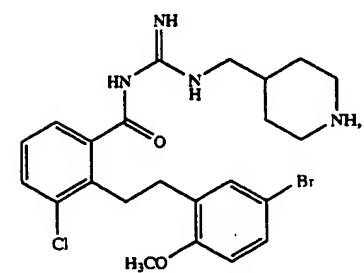
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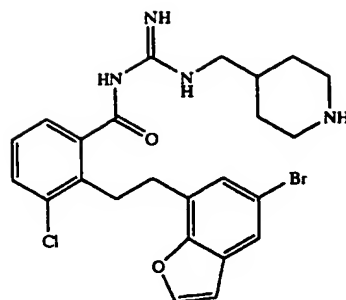


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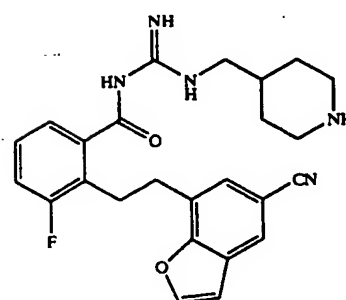


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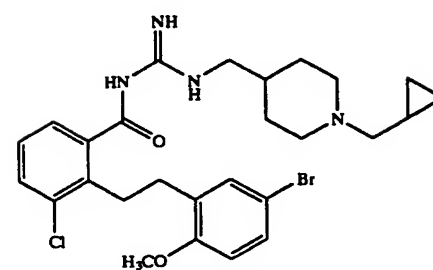
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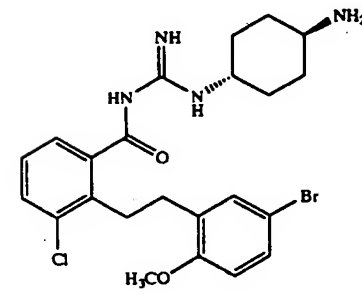
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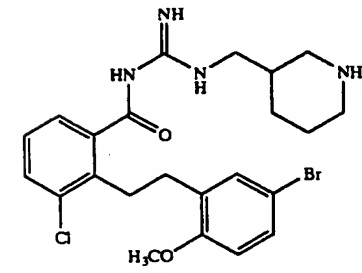
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107

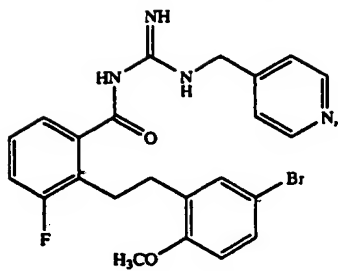


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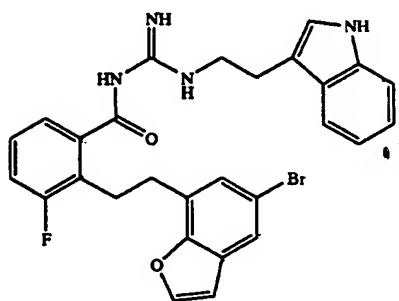


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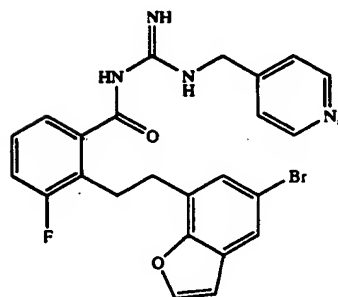
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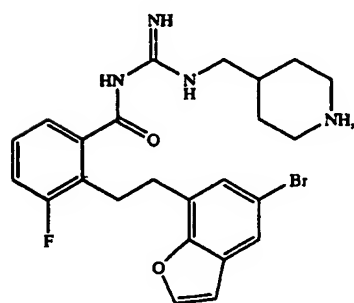
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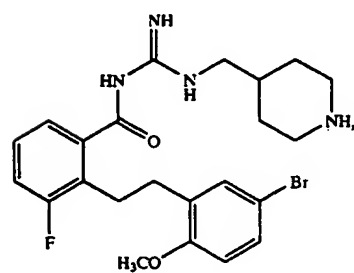
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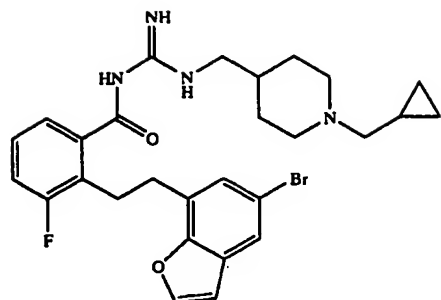


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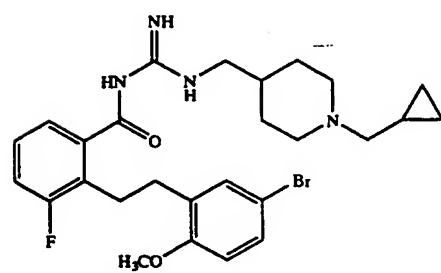


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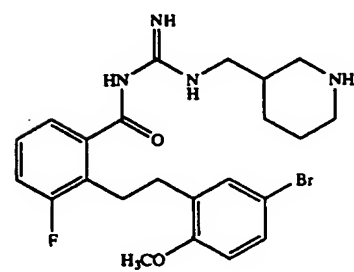
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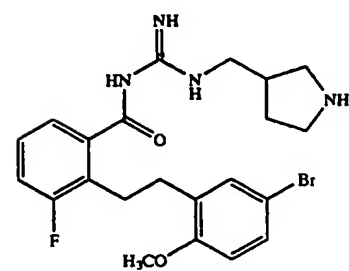
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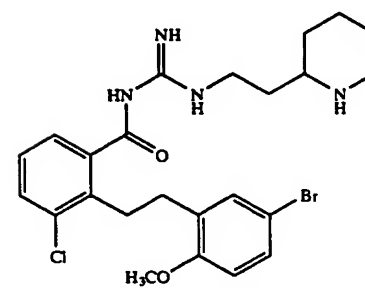
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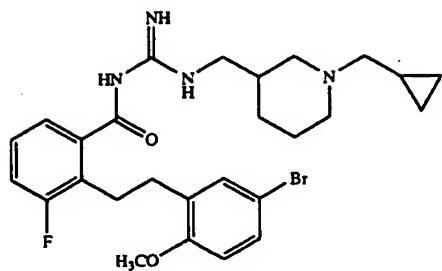


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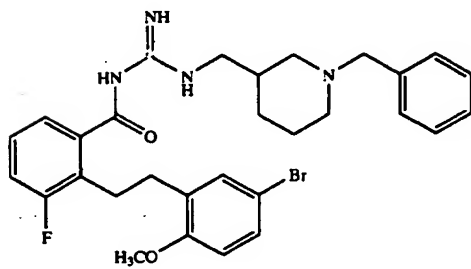
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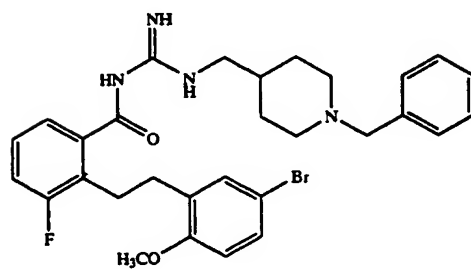


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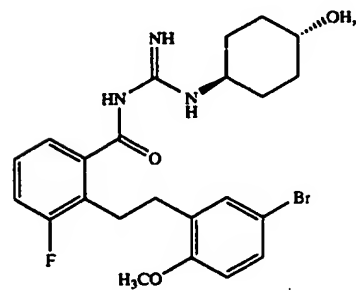
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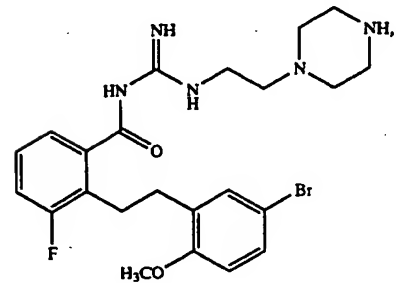
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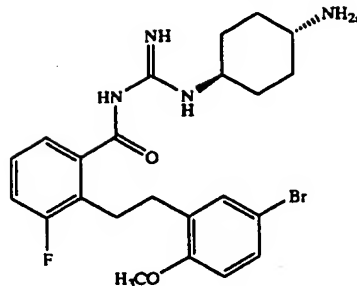
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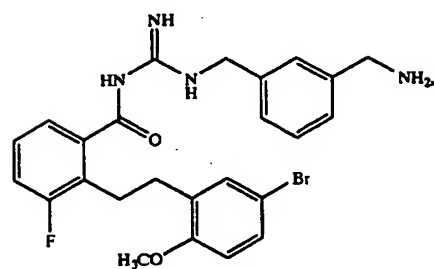


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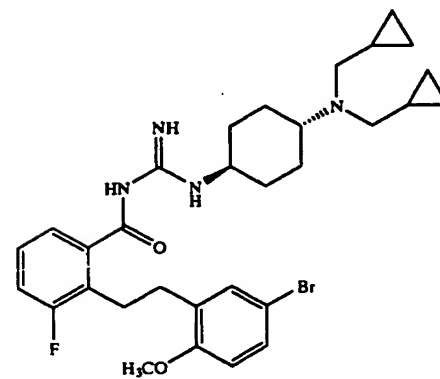


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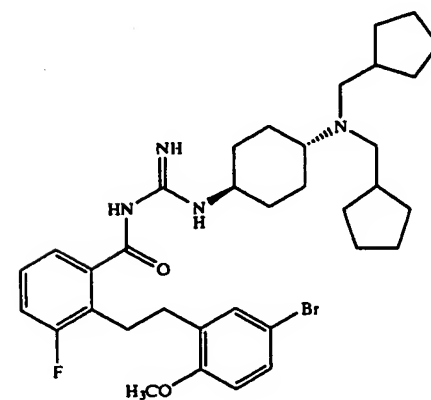
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127

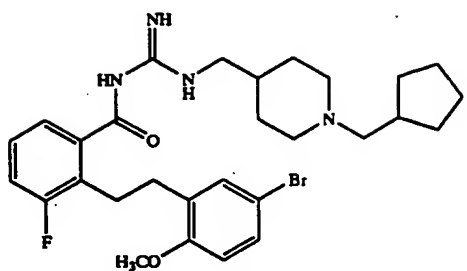


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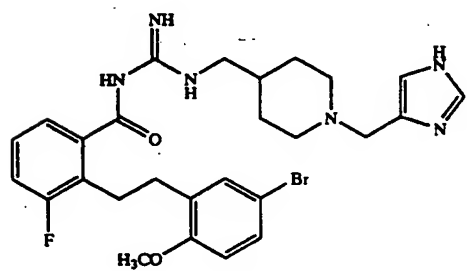


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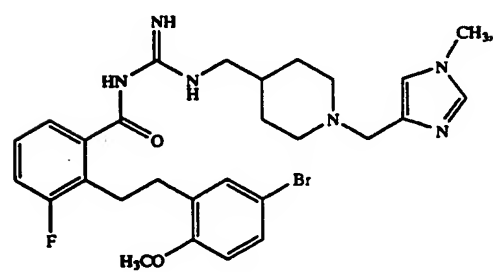
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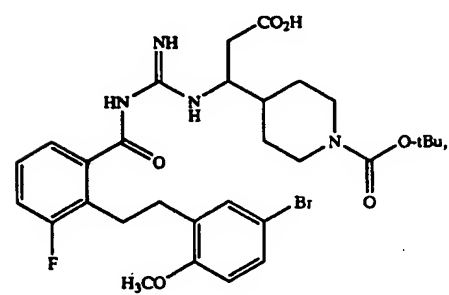
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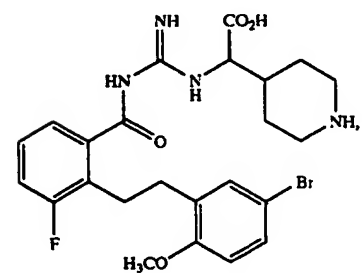
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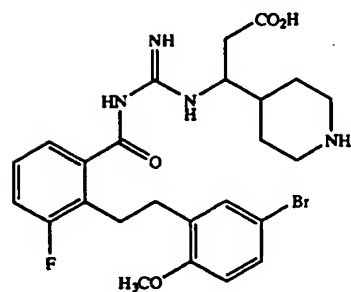


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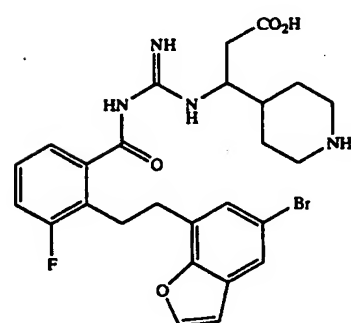


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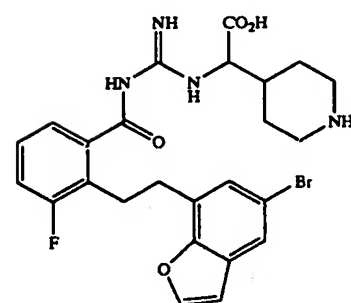
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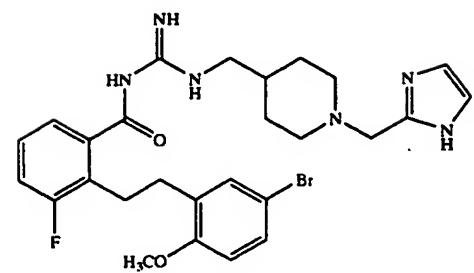
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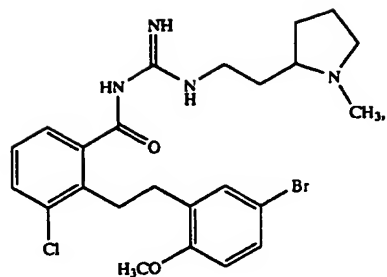
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137

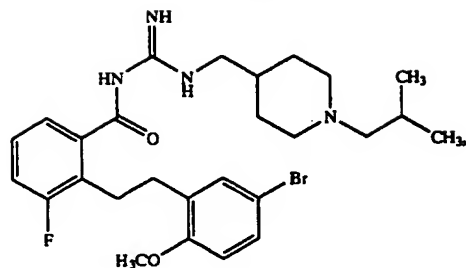


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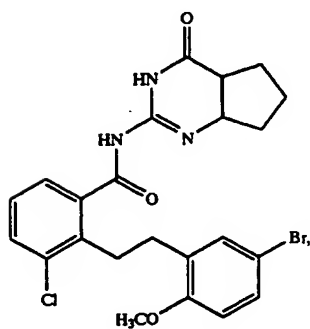
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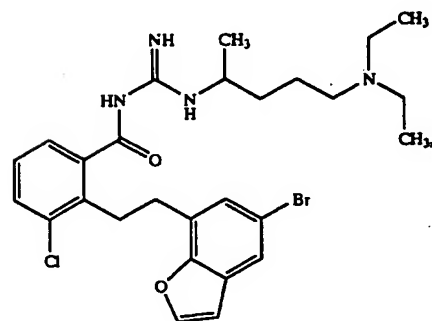


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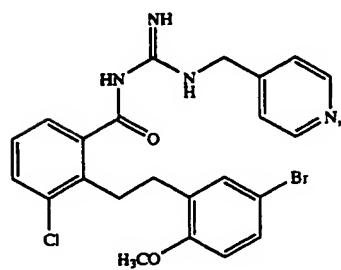
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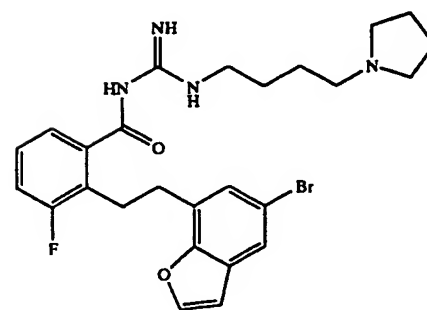
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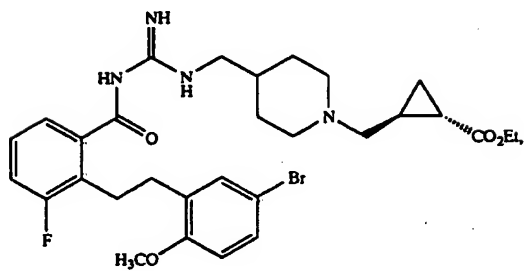
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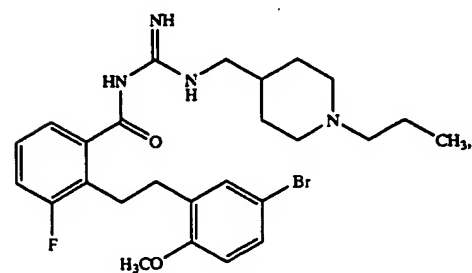
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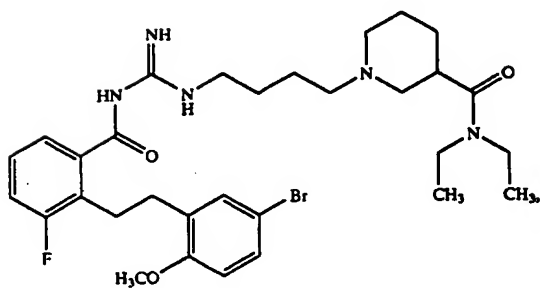
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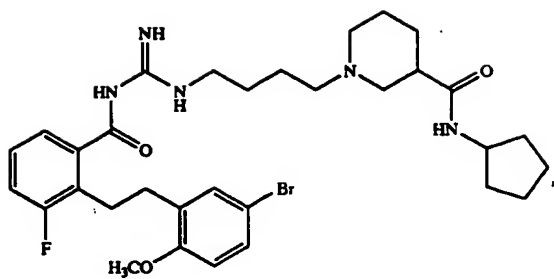


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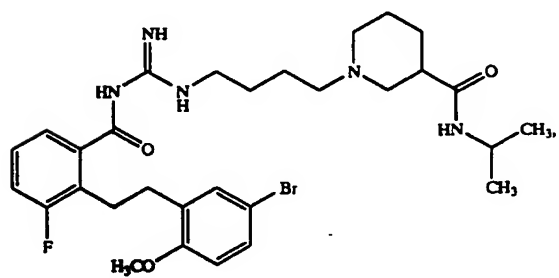


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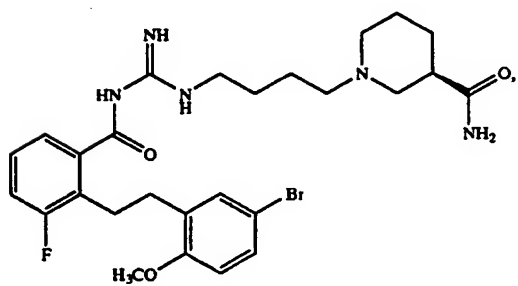
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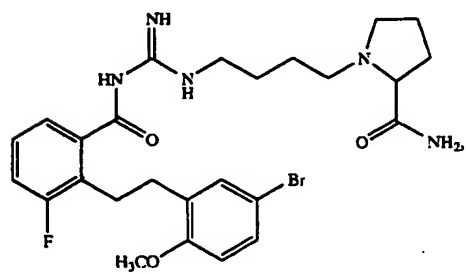
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149

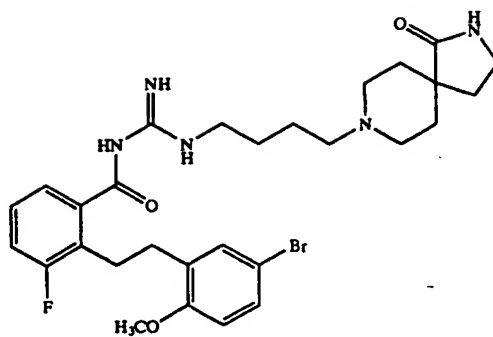


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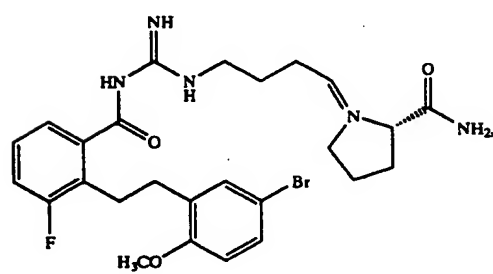


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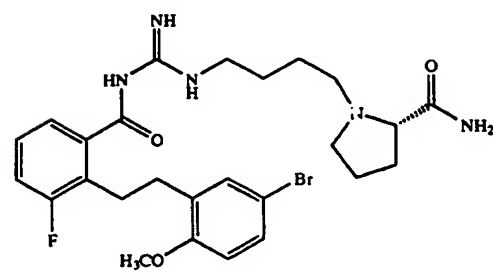
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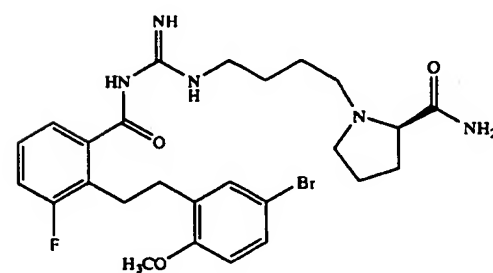
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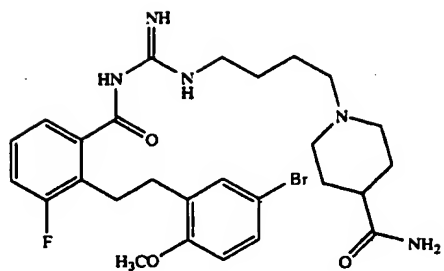
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154

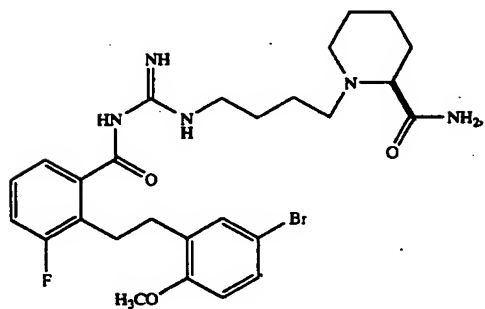


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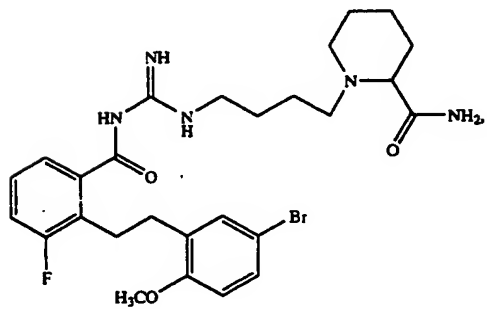


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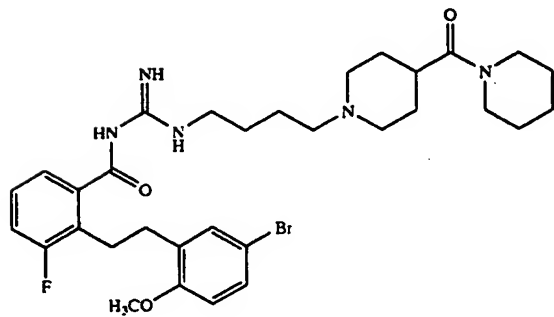
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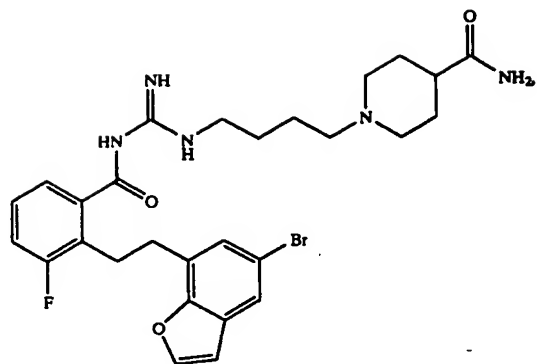
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158

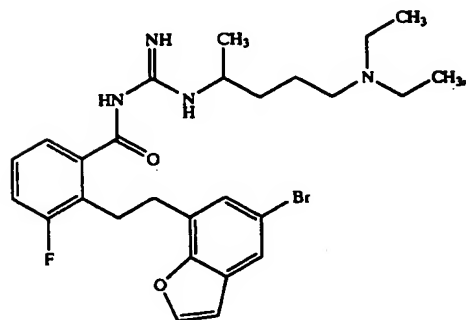


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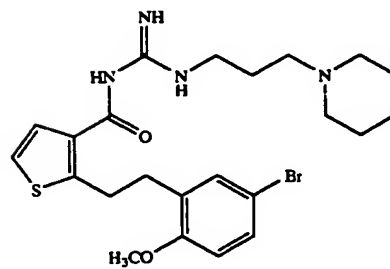


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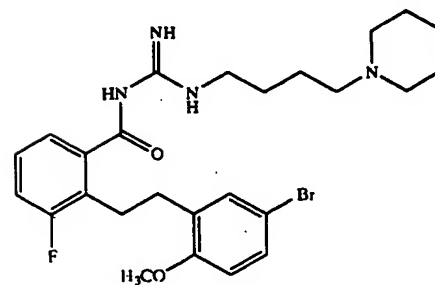
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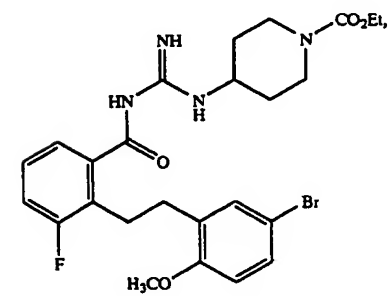
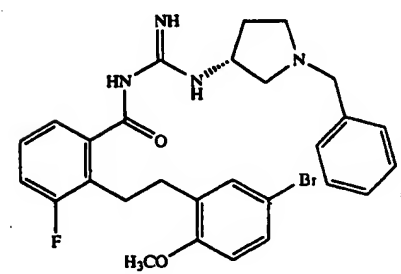
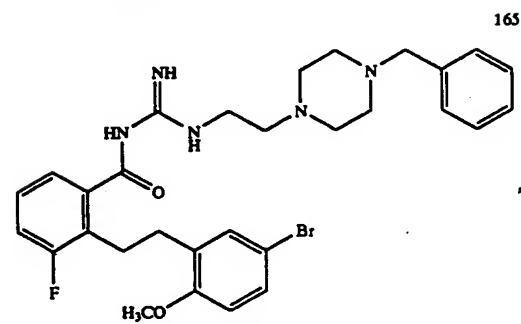
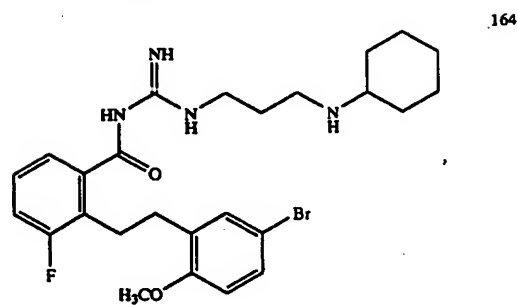
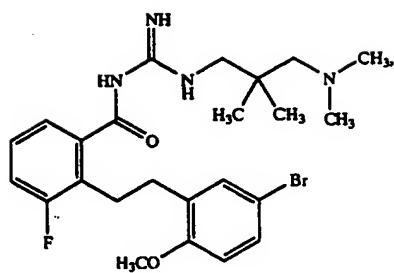
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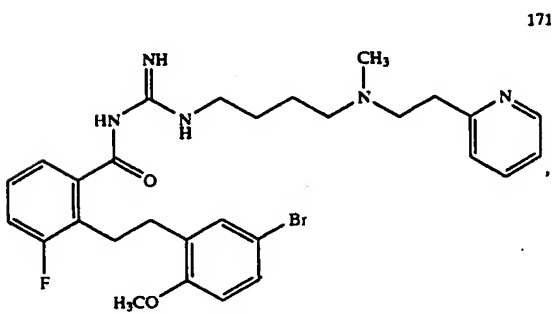
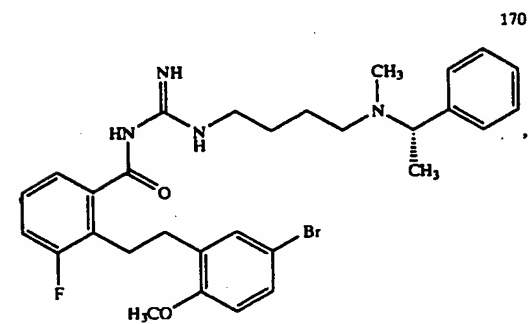
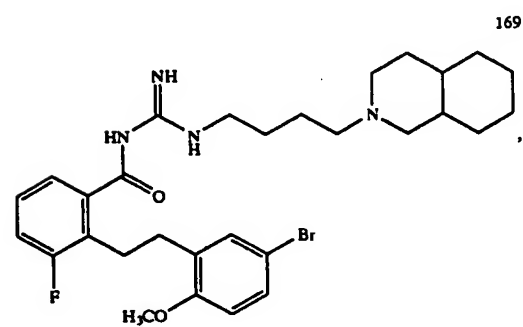
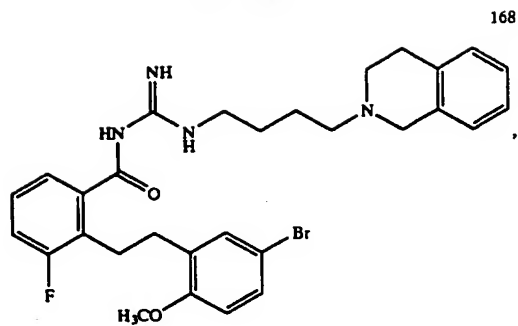
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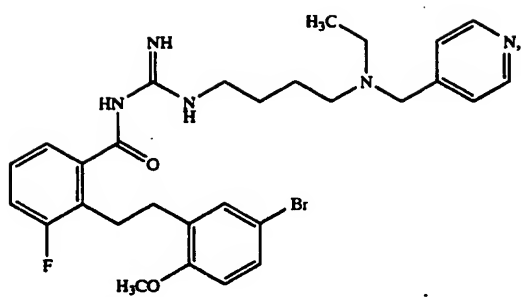


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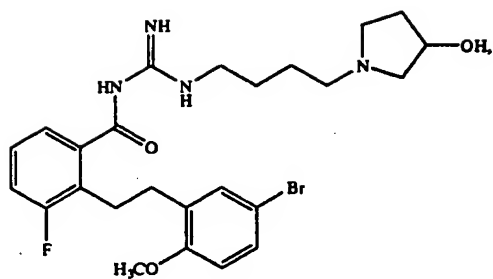
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173

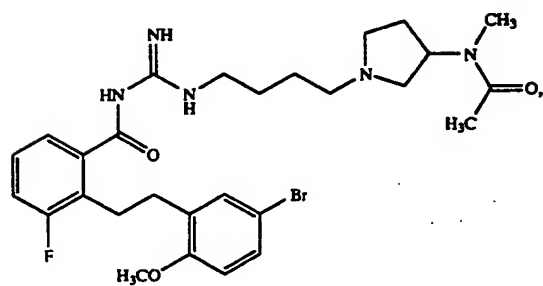


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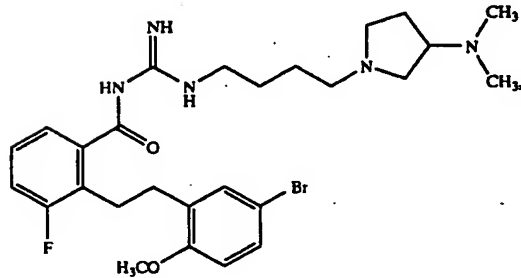
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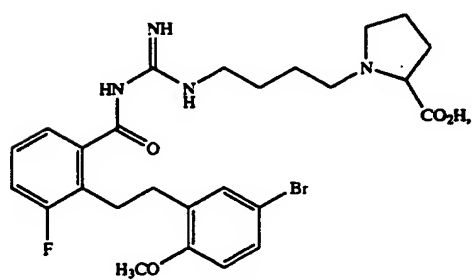
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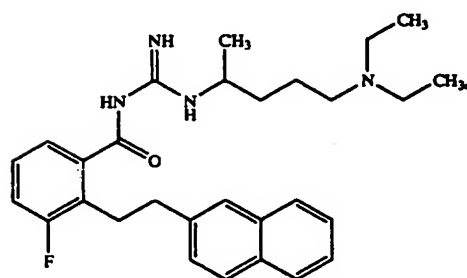
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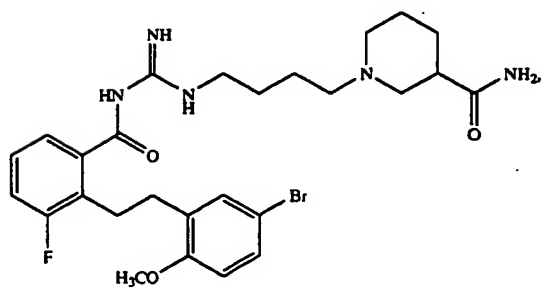
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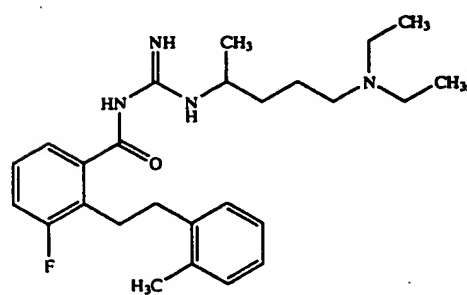
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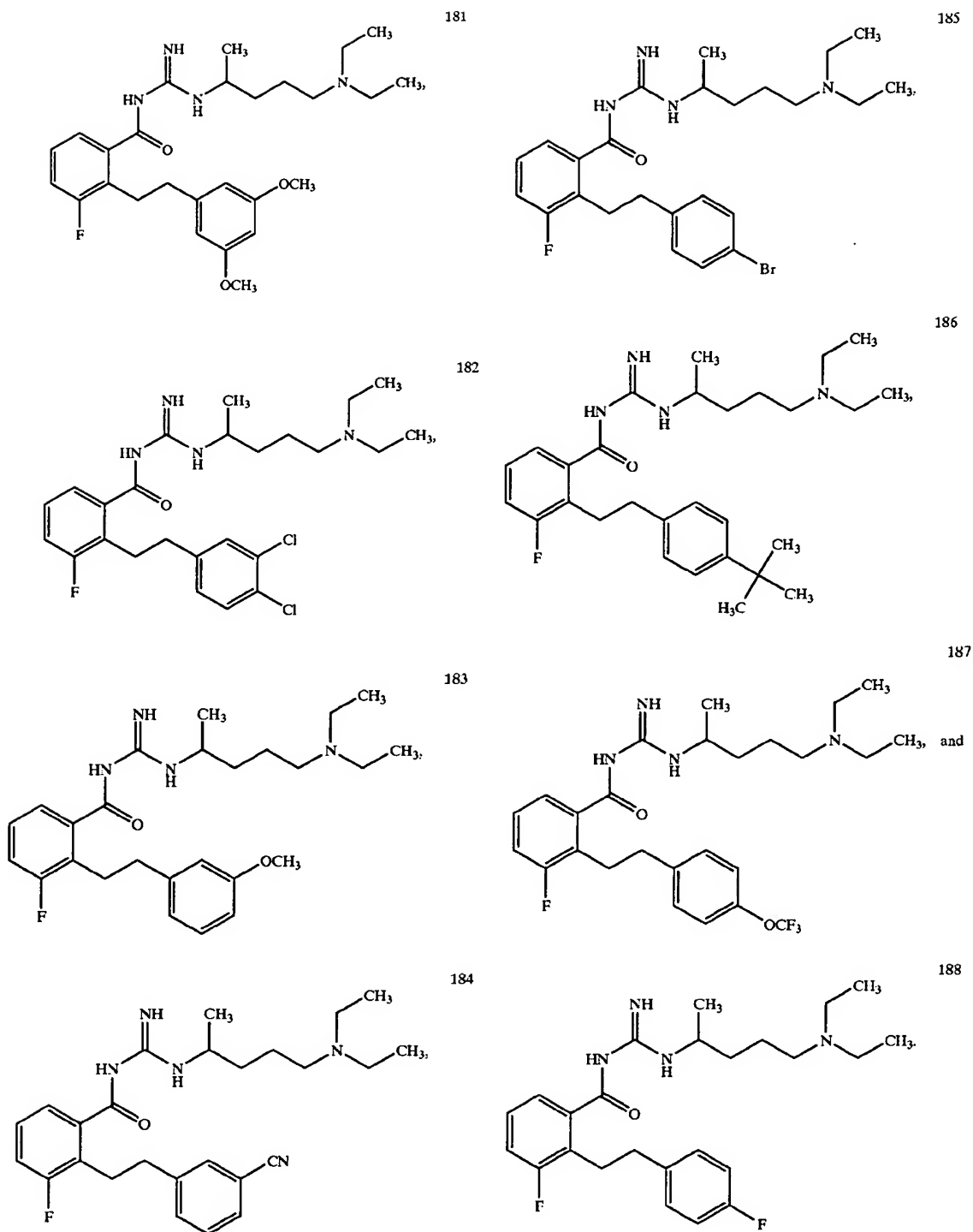


176



180





22. (Original) A pharmaceutical composition comprising a compound according to claim 1 and a pharmaceutically acceptable carrier.

23. (Original) A method of treating an MC4-R associated disorder in a patient in need thereof comprising administering to said patient a compound of formula (I) in claim 1.
24. (Original) A method of treating an MC4-R associated disorder in a patient in need thereof comprising administering to said patient a pharmaceutical composition comprising a compound of formula (I) in claim 1.
25. (Original) A method of treating a weight loss disorder in a subject identified as in need of such treatment comprising administering a compound of formula (I) in claim 1.
26. (Original) The method of claim 25, wherein the weight loss disorder is a cachexia, aging involuntary weight loss, catabolic wasting, or anorexia.
27. (Original) The method of claim 26, wherein cachexia is cancer cachexia, cardiac cachexia, chronic illness cachexia, or AIDS cachexia.
28. (Original) A method of treating a bone associated disorder in a subject identified as in need of such treatment comprising administering a compound of formula (I) in claim 1.
29. (Original) The method of claim 28, wherein the bone associated disorder is osteoporosis, bone fractures, bone formation associated with surgical procedures, osteogenesis imperfecta, hypophosphatasia, Paget's disease, fibrous dysplasia, osteopetrosis, myeloma bone disease, or the depletion of calcium in bone.
30. (Original) A method of treating a pain disorder in a subject identified as in need of such treatment comprising administering a compound of formula (I) in claim 1.
31. (Original) The method of claim 30, wherein the neuronal disorder is neuropathic pain or allodynia.

32. (Original) A method of inhibiting MC4-R activity in a patient in need thereof comprising administering to said patient a pharmaceutical composition comprising a compound of formula (I) in claim 1.